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THE MUNICIPAL INDEX and ATLAS, used in connection with the current advertisements in THE AMERICAN CITY, places officials in the most favorable position to obtain all types of available equipment and supplies from manufacturers who desire to serve municipal government departments. This 791-page annual is published by The American City Magazine Corporation, 470 Fourth Ave., New York 16, N. Y.

See pages 19, 21, 23, 24, 27, 28, 155, 157, 159, 160, 163, 165 for catalogs and publications on municipal and civic subjects

List of coming conventions, page 151 — **Index to Advertisers, page 202**

"Lend me your ears" says science

It's no accident that you hear so clearly when you pick up your telephone. Bell Laboratories engineers are constantly at work to make listening easy for you.

When these engineers design a method to bring speech still more clearly to your ears, the new circuit is given many scientific tests. Then it gets a final check from a "Sounding Board" like the one pictured above.

This check shows just how the system will work in actual use. The men and women represent you and many millions of other telephone listeners. Their specially trained ears check syllables, words and sentences as they come over the telephones. While they listen, they write down their ratings on the pads in front of them.

The Board members approve only when they are sure that the voice they hear is natural in tone, clear in quality and easily understood. Not until they are certain the circuit will suit your ear is it put into use.

BELL TELEPHONE SYSTEM

BELL TELEPHONE LABORATORIES *A great research organization, working to bring you the best possible telephone service at the lowest possible cost*

Our Municipal Notebook

City With a New Look

"Pittsburgh's victory over smoke inspires 200 other communities."—News item, *Wall Street Journal*.

The streets of Pittsburgh now are clean,
The grass of Pittsburgh now is green,
The sky of Pittsburgh now is blue,
At night, the Pittsburgh moon winks
through;
Gone is the smog that made unpretty
The town yclept "The Smoky City."

The citizens and corporations,
Their friends, their near and far relations,
Fooled their resources and their days
Evolving means, deciding ways
To feed their burners smokeless mixtures;
To fit their burners with new fixtures
Which would those coal-tar oils consume
That formerly smoked up the flume;
To diesel-engine trains of cars—
Yes, wagons can be hitched to stars!

Now friend can see friend when they meet,
Now folk can see sights on the street,
Now clothes that housewives hang to dry
Will not be cinders in the eye.

And here is testimony prime
That Pittsburgh's rid itself of grime:
Communities both near and far—
From L. A. (Cal.) to Zanzibar,
From Gary, Boston, and New York
To Halifax and County Cork—
Have written letters, sent committees
To learn the secret—for their cities;
They're allocating sums of money
To make life in their own towns sunny.
(From New York, this financial statement:
"Some thirty millions for smoke abatement!")

So, let bells ring, so, let horns toot
Unfond farewell to smoke and soot!

—A. S. FLAUMENHAFT

EDITORIAL NOTE — When this poem found its way into the editorial sanctum, we put the question to Frederick Bigger, Chairman of Pittsburgh's Department of City Planning, as to how nearly the erstwhile "Smoky City" had actually achieved the smokeless perfection that the verses suggest. Here is Mr. Bigger's reply:

After I have made all the cagey qualifications one must make first—allowing for the fact that the county's program of necessity is not so far advanced as the city's and that the county area surrounds us, and noting that the whole job isn't entirely done, I must record in all honesty that the change in the local atmosphere has been startling. I allow for faulty memory, but seem unable to recall so many continuous sunny days — even in seasons when normally fewer are to be expected than those in the summer. I have not myself noted any old fashioned "smog" when we have our river-valley fogs. A great number of downtown buildings are being cleaned for the first time in years, and as I see the Pennsylvania terminal office building undergoing that treatment (with a few non-diesels still operating trains), I'm convinced.

You might, from a crabbed perfectionist, receive a mild protest if you were to publish the verse; but I think you are reasonably safe on that score—except some may say the poet's verse does not everywhere scan!

By an interesting coincidence, two days after Mr. Bigger's letter was written, *The New York Times* (of August 29, 1948) carried a special dispatch headed "Pittsburgh Maps Wider Smoke Curb—City Compares Own Law with Proposal for the County, Soon to be Effective." This story points out that Pittsburgh has recognized that there could not be a minimum of smoke in the city and county unless the latter joined in. To that end the proposed county law would affect 128 communities in the Pittsburgh region.

So perhaps not only Pittsburgh, but all of Allegheny County is on its way to that smokeless new look that every forward-looking industrial community must seek to achieve. (See also page 85.)

Construction Costs Too High?

WHAT makes construction costs what they are today will come under clinical examination at the 1948 American Public Works Association Annual Congress, to be held October 17-20 in Boston. This will be only one phase of the meeting, which will discuss street construction, airports, water supply, sewerage, refuse collection and disposal, and other topics bearing on public-works matters.

Participating in the panel that will analyze construction costs will be the following:

Richard J. Gray, president, AFL Building and Construction Trades Department; C. M. Mortenson, executive secretary, Products Council, Inc.; H. E. Foreman, managing director, Associated General Contractors; Harrison P. Eddy, Jr., Metcalf and Eddy, consulting engineers, and S. S. Baxter, Bureau of Engineering, Surveys and Zoning, Philadelphia.

Major General Philip B. Fleming, Administrator of the Federal Works Agency, Washington, D. C., will be the moderator.

Standardized Codes And Materials

COMPLETION of the uniform plumbing code, recently compiled in preliminary form, will be pushed in the program of the Housing and Home Finance Agency's new Division of Standardized Codes and Materials, establishment of which was authorized by the special session of Congress as part of the Housing Act of 1948. Administrator Raymond M. Foley announced on September 4.

Leonard G. Haeger, formerly chief of the HHFA technical staff, has been named director of the new division, which is authorized to undertake technical research and studies to promote

The American City Quiz

Match Wits With the Experts

QUESTIONS

1. ***How many operating floors has the modern incinerator?***
2. ***How much refuse can a tractor equipped with a bull-clam shovel handle in a working day, in a well-operated sanitary fill?***
3. ***How can sidewalk that has settled be returned to grade?***
4. ***How would you define an "objectionable" taste or odor in water?***
5. ***Do algae have any beneficial functions in water?***
6. ***What causes most of the breaks in the water-distribution system?***
7. ***How does sludge from a sewage treatment plant compare with manure for fertilizer?***
8. ***How long should sludge be allowed to digest?***
9. ***When is the best time to sweep streets?***
10. ***Is truck mileage traveled the correct basis of motor-maintenance programs in municipal work?***

(Answers on Page 7)

THE BELL AND SPIGOT CLAMP WITH THE SEALED GASKET

SKINNER-SEAL Bell Joint Clamps stop bell and spigot joint leaks under pressure. Speedy one-man installation cuts repair costs.

Gasket is completely SEALED and protected; at the bell face by a Monel Metal Seal Band; at the spigot by hard, vulcanized gasket tip, acting as a plug. Equalized pressure forces gasket into every crevice in the joint, sealing the leak at its source. Sturdy malleable iron Compression and Anchor Rings — shaped and pressure-tested before shipping. Large ¾" high-tensile steel bolts, cadmium plated.

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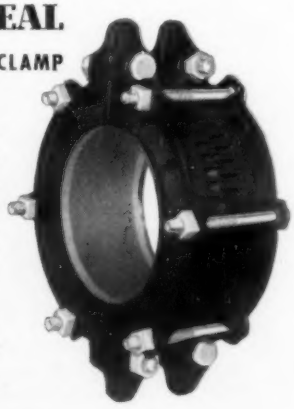
For repairing broken cast iron mains. Gasket SEALED by Monel Metal Band at top, by hard vulcanized tip at sides, by Brass Band at break itself.



FOR REPAIRING BROKEN CAST IRON MAINS

M. B. SKINNER CO., SOUTH BEND 21, IND.

SKINNER-SEAL BELL JOINT CLAMP

development and acceptance of uniform building codes, and to promote standardized dimensions and methods for assembly of home-building materials and equipment.

The proposed uniform plumbing code was developed by the Uniform Plumbing Code Committee, which, in cooperation with the HHFA and the Department of Commerce, is now conducting tests looking toward expansion of the code for housing into a set of recommendations applicable to all types of plumbing installations, including industrial and commercial structures. These tests are being made at the National Bureau of Standards.

More than 5,000 copies of the Uniform Plumbing Code for Housing have been distributed among groups in the construction field and urban localities, and the 16 copies of the film, "Toward a Uniform Plumbing Code," showing the test made with transparent plastic piping used at the National Bureau of Standards in the Code's development, are heavily booked for several months in advance.

General Electric's Decentralization Plan

THE AMERICAN CITY's editorial last month, headed "Factory Dispersal for National Security and Rational Town Planning," has brought the following comment from Philip D. Reed, Chairman of the Board of the General Electric Company:

The physical part of General Electric's decentralization program takes its pattern from economic planning rather than from any specific planning of wartime plant-dispersal. We have definitely favored building smaller plant units in our many new post-war locations for the reason that these offer better living and working conditions for our employees—easier access to schools and shopping centers, better transportation, lower taxes, more recreation facilities, and the many benefits of an economic and social character that are generally associated with life in a smaller and more cohesive community, as compared to a big city or an already overcrowded industrial area. We have no wish to be the dominant factor in the life of a community, since our experience clearly indicates that this is unhealthy both for the employee and for the company. These factors in themselves make for lower manufacturing costs.

In addition, we know that we can produce more efficiently and in greater volume in a small, self-contained plant devoted to the making of a single product or line, than in the larger general-purpose plant which manufactures many different things. The necessity for reconversion and expansion after the last war made it possible for General Electric to develop its new plant facilities along these lines. There remain certain circumstances, of course, where large plants are still necessary, as in bringing together the skills and manpower necessary to build turbines and large rotating machinery.

Despite the fact that our decentralization has been fundamentally economic in nature, it is nevertheless true that it automatically offers many of the security advantages which have been advocated by the National Security Resources Board, and in this respect is doubly desirable.

Plan for Encouraging Park-Planting Donations

AS a feature of New York's Golden Anniversary, now being celebrated, a plan for encouraging contributions of flowering shrubs and trees to the Park Department has been worked out by the Park Association of New York City, a citizens' organization. The idea may be applicable in other municipalities that are seeking methods of encouraging citizen donations for park purposes, for commemorating civic celebrations, and for making memorial gifts.

In New York, the Park Department has prepared for public information lists of park and parkway areas in all boroughs where additional plantings are needed. These are made available by the Park Association with a list of the kinds and cost of desirable plants.

The donor will be permitted to designate the borough and park or parkway in which he wishes his gift to be planted. He will send his gift in cash, tax-exempt, to the Park Association, which will turn it over in full to the Park Department. Final control will be retained by the Park Department, since arrangements for the most effective displays will depend on the number of plants received. In all instances the donor will be informed of the location of his gift. The placing of plaques or markers bearing the donor's name and, if it is a memorial gift, the name of the deceased, may be arranged for at reasonable cost wherever practicable.

Further information may be obtained from the Park Association of New York City, Inc., 119 East 19th St., New York 3, N. Y.

The American City Quiz

Match Wits With the Experts

Answers to questions on page 5

1. Most have three: a charging floor, a stoking or operating floor, and an ash-removal floor. However, Henry W. Taylor, New York City consulting engineer, cut this to two in one installation. At Darien, Conn., he built an incinerator using Pittsburgh-Des Moines furnaces capable of handling 60 tons per day. This incinerator does not have the ash-receiving floor, which is eliminated by the use of easily operated Hydrojet ash-handling equipment. The same crane that charges the furnaces moves the quenched, cooled ashes from the ash pit to the trucks.

2. R. R. Lacy, Superintendent, Waste Disposal Service, reports that Fort Worth, Texas, handles 500 cubic yards of loose refuse with one bullclam tractor per day in its sanitary fill.

3. Robert L. Anderson, Superintendent of Public Works, Winnetka, Ill., finds that a small Koehring mudjack has proved practical for this type of work. A three-man crew with a truck and compressor should be able to average 125 lineal feet of 5-foot sidewalk per day, raising it three inches.

4. Tastes and odors generally are objectionable when they are foreign to the product used. W. A. Welch of Industrial Chemical Sales says that people expect water to be tasteless and odorless. They object to the cucumber taste of synurna in water, relish it in salads. They enjoy eating watermelon but object to the green-algae taste of watermelon in water.

5. Ross Thuma, Superintendent of Filtration, St. Paul, Minn., records that algae supply oxygen, thus preventing water stagnation. They remove carbon dioxide and certain mineral salts, and they form the food supply for crustaceans which are in turn utilized for fish food.

6. Faulty construction, the Cast Iron Pipe Research Association reports, accounts for nearly half the breaks in water mains. More than a quarter of the breaks occurred for no recognizable reason. Excessive pressure and corrosion each account for less than 10%. Faulty pipe or excessive loads account for less than 5% each.

7. Kerwin Mick of the Minneapolis-St. Paul Sanitary District records that on a dry-weight basis, manure has 1.7 units of plant food while the District's sludge has 3 units. The District's sludge is undigested.

8. R. S. Rankin, the Dorr Co., states that the digesters of a sewage-treatment plant should be able to hold sludge for at least 60 days. Less than 30 days will generally produce a poor supernatant.

9. Dayton, Ohio, has found that the best time to sweep streets is from 1 a.m. to 9 a.m.

10. It should be based on motor hours of operation rather than on mileage. Many trucks have power take-off and keep the motor running, Newark, N. J., reports.

Send in your suggested questions with the answers on municipal topics for use in this feature. THE AMERICAN CITY will make a small payment for each question accepted.

adds new

HORTON Elevated Tanks

1,000,000-gallon units are part of waterworks improvement plan

The population of Amarillo, Texas, increased from 51,686 in 1940 to an estimated 72,000 in 1947. The rapid growth of the city made it necessary to increase the capacity of the facilities for water production, storage and distribution, and an expansion program was begun early in 1945. Included in the program was the erection of several elevated tanks, having capacities of 1,000,000 gals. each, to supplement the existing 500,000-gal. tank which we built for the city in 1924. Two of Amarillo's new tanks are Horton all-welded steel units of the radial-cone bottom design, a design which is particularly adapted to large-capacity tanks.

The tanks were erected in separate sections of the city, in order to secure the advantages of "distributed storage," and with the present location of storage facilities, water pressure can be kept uniform in areas of heavy demand, and pumping equipment and transmission lines can be used more effectively to meet peak demands.

* * *

If your city is planning new elevated storage facilities, write our nearest office for estimating figures on Horton radial-cone bottom or ellipsoidal bottom tanks.

CHICAGO BRIDGE & IRON COMPANY

Atlanta 3 ..... 2114 Healey Bldg.
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Chicago 4 ..... 2127 McCormick Bldg.
Cleveland 15 ..... 2236 Guildhall Bldg.
Detroit 26 ..... 1501 Lafayette Bldg.
Havana ..... 402 Abreu Bldg.
Houston 2 ..... 2101 National Standard Bldg.
Los Angeles 14 ..... 1403 Wm. Fox Bldg.
New York 6 ..... 3308—165 Broadway Bldg.
Philadelphia 3 ..... 1616—1700 Walnut Street Bldg.
Salt Lake City 1 ..... 1501 First Security Bank Bldg.
San Francisco 11 ..... 1233—22 Battery Street Bldg.
Seattle 1 ..... 1301 Stuart Bldg.
Tulsa 3 ..... 1625 Hunt Bldg.

Plants in BIRMINGHAM, CHICAGO, SALT LIKE CITY and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

Committee Report on Pipe-Laying Specifications

SPEAKING for the committee of which he is chairman, Joseph P. Schwada, City Engineer, Milwaukee, Wis., presented a discussion of the Committee Report on Tentative Specifications for Laying Cast Iron Pipe at the annual American Water Works Assn. meeting in Atlantic City on May 3.

The Committee recommended that definitions, codes, regulations, permits, and minimum wages be placed in the General Requirements. Matter pertaining to work, materials and methods should be included in the Specification.

In general, the *Standard Specification* should cover the various acceptable materials and methods of construction. The Addendum should designate which of these materials and methods are to apply to the particular project being built. It should also include:

Schedule of progress and completion date
Special works
List of material furnished by the contractor
List of material furnished by the owner
Provisions covering the use of water
Restoration of pavement
Any other materials or methods allowed.

In the specification covering cleaning of pipe and fittings, the Committee recommends following the procedure outlined in the February 1948 *AWWA Journal*, "Procedure for Disinfecting Water Mains."

In regard to permissible leaks, present specifications allow 100 gallons per 24 hours per inch of diameter per mile of 12-foot lengths of pipe at 150 pounds per square inch test pressure. Proposed specifications cut this to 70 gallons. The proposed specifications further offer this formula to determine allowable pipe leakage.

$$L = \frac{ND(P)^{1/2}}{1850}$$

In this formula

L is the allowable leakage in number of gallons per hour
N is the number of joints tested
D is the nominal diameter of the main
P is the test pressure in pounds per square inch.

In addition to the formula there is included a table of allowable leakages per 100 joints in various size pipe at different test pressures.

In that part of the specification covering the excavation of the trench and its preparation, the Committee felt it advisable to include blocking the pipe although many frown on the practice. However, if the pipe is to be placed on blocks to line and grade, such blocks should be bedded firmly on original base material. The trench should be supplied with a suitable backfill. This should be applied simultaneously on both sides of the pipe to elevation 6 inches above the pipe if it is 8 inches in diameter or less. On larger pipe this should be 6 inches above the horizontal center line. The backfill should be tamped in 4-inch layers, and should be moistened if this seems necessary. If the surface is to be paved immediately, the trench should be backfilled with sand or gravel.

When placing a line under a railroad crossing, the Committee recommends that full responsibility be placed on the contractor for following the regulations of the railroad.

In the matter of jointing, the Committee recommends the following yarning or packing material:

Molded or tubular rubber rings
Asbestos rope
Treated paper rope
Braided cotton
Hemp approved by the engineer.

In the case of the braided cotton or hemp, this shall be disinfected thoroughly. In the case of cement mortar being used to make the joint, the Committee feels that yarning material may be omitted.

In the present set of recommendations, the Committee does not include the use of sulphur compounds. Mr. Schwada expressed the opinion that if the material is included, there should also be included definite information setting forth conditions where it can and cannot be used. Committee members were not unanimous on this, however.

For pipeline chlorination, the Committee recommends following the procedure for disinfecting pipelines, approved by the Board of Directors, Sept. 30, 1947.

How Michigan Regulates Wells

THE State of Michigan has definite regulations governing wells used by municipalities without treatment. These regulations were adopted by the State Council of Health and are administered by the Bureau of Engineering in the Michigan Department of Health. Following are the provisions:

1. The well site must be isolated at least 200 feet from sources of sewage pollution such as sewers, privies, septic tanks, and seepage pits. Normally this means if the area is proven for water production and land area is available, it may be desirable to secure more land for future water supply. An exception to the 200-foot isolation distance is made by engineers of the department in the event the logs of the test or permanent well shows the existence of a stratum, 15 feet or more thick, of impervious material, such as clay, located between the ground surface and the water-bearing formation. Under these conditions the isolation distance may be reduced to 100 feet.

2. An approved well site should be above flood waters and have good surface drainage. We recognize, however, that Mother Nature may have located the only available sand-and-gravel water-bearing formation (such as channel gravel) in low areas that are subject to occasional flooding. Under these conditions, approval is given to a low site with the stipulation that

a. an impervious stratum of reasonable thickness exists between the ground surface and the water-bearing formation, and

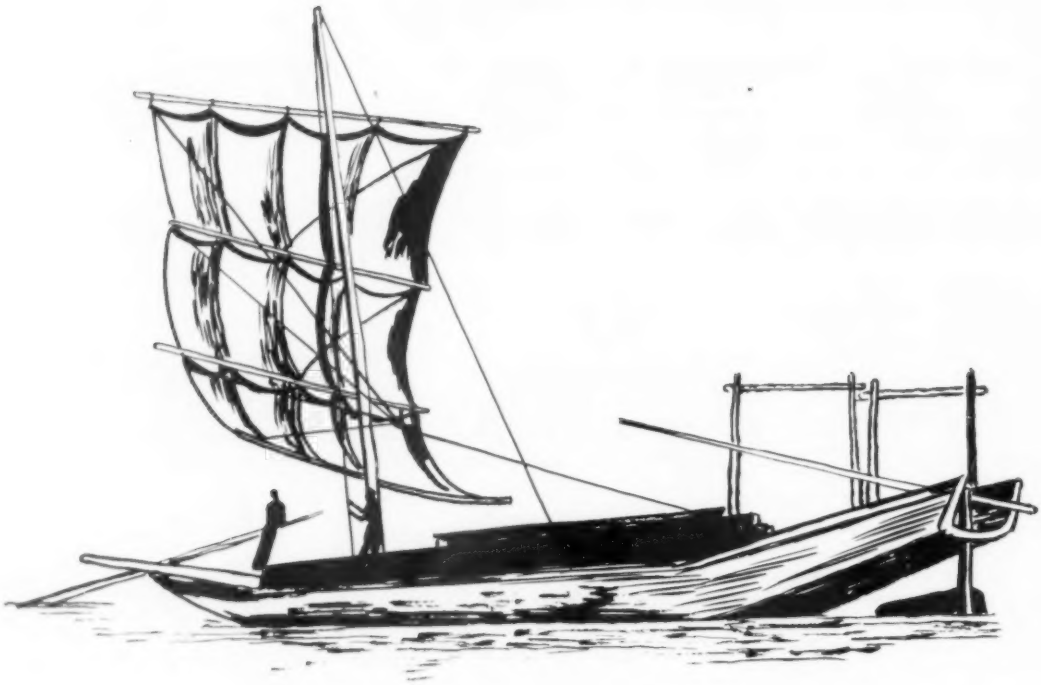
b. the well casing extends at least 5 feet above the highest known flood level, and an earth fill with a minimum radius of 25 feet be built around the well to a height of at least 4 feet above the flood level.

3. Wells should be housed in structures with floor elevations, at or above the natural ground surface. Pump pits, rooms, etc., below the ground surface should be avoided. Approval of a well pit may be obtained if the pit has a gravity drain to the surface of the ground.

4. Suction lines, unless surrounded with air, are to be avoided.

5. Deep-well turbine pumps should have above-ground discharge lines.

6. Well casings should be watertight throughout their entire length and shall be water-tight for the top 30 feet.

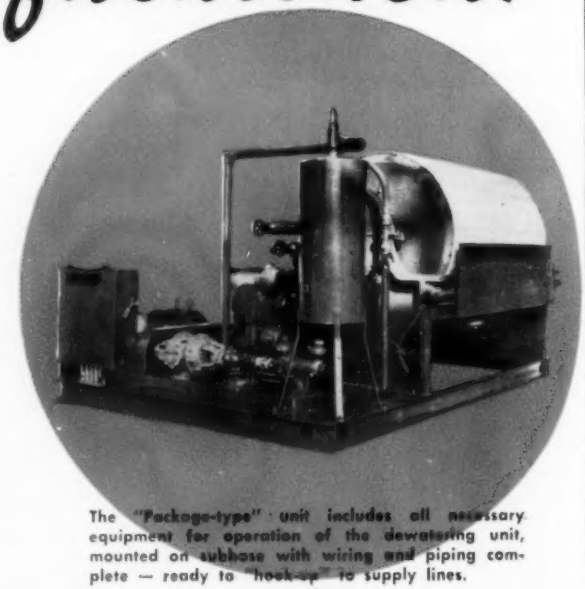


No! too old fashioned!

Travel via scow is not for us! We want everything relating to our individual lives to be right up to the minute. In this modern world we can have it too. Look at our highways, cars, television, etc. Look at everything connected with our cities. Yes, look at our city sewage treatment plant. Well maybe we shouldn't look at that. The treatment plant is the one, most important, department in the city and it's the one that we have chosen to neglect and let run down. A recent survey shows some 13,000 cities with no sewage treatment plant at all. 50% of the existing plants are in bad need of repair or badly overloaded.

Your health and the health of the whole community depend on proper treatment of domestic sewage and industrial wastes. When you plan the treatment plant insist on maximum protection — insist on vacuum filtration of sewage sludge. This will insure your city of freedom from: offensive odors, the usual sewage plant insect breeding places, depreciated property values around the plant site and less tax burden.

For more information on vacuum filtration of sewage sludge write The Eimco Corporation, P. O. Box 300, Salt Lake City 8, Utah.



The "Package-type" unit includes all necessary equipment for operation of the dewatering unit, mounted on subbase with wiring and piping complete — ready to "hook-up" to supply lines.

EIMCO

THE EIMCO CORPORATION

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Sewerage and Sewage Treatment

Kitchen Grinders, A Sanitation Measure

Two small cities comment on this method of garbage disposal

IN RAYMONDVILLE, Texas, city officials regard the use of kitchen grinders as a step forward in municipal sanitation. For that reason they have adopted the policy of encouraging their installation.

W. H. Post, Commissioner of Public Works, reports that garbage is collected daily in the business district, but only once a week in residential areas. As a result, he states that the garbage is well ripened before collection, since this part of Texas enjoys eight months of hot weather. The decaying garbage is accompanied by flies and other questionable sanitary conditions.

"Every bit of garbage that is put through the kitchen grinder is just that much less for the truck to haul, and will not be exposed to flies and rodents," Commissioner Post reports.

The sewage in Raymondville is relatively weak, since the use of water here is high. The city has several ice plants and canning plants that put all their waste water into the sanitary sewer. The Superintendent of Sewage Treatment advises that his plant has plenty of capacity to handle an added load.

To date, Commissioner Post states that he has had no reports of stopped sewers or service lines because of the grinders. There have been relatively few in use, but those in operation have not given any trouble.

Raymondville has, during the past few months, been experiencing an outbreak of polio. Consequently, good sanitation is uppermost in the minds of all people here. The Navy has sprayed the entire city with DDT and hand-spraying crews also have covered the town. There have been 10 recorded cases, but city officials all feel that this is too many. Any measure that cuts the factor that unsanitary conditions may play in this disease has the wholehearted cooperation of the city family.

Newton, Kans., is another small city that pays particular attention to the garbage grinders. City Manager Gerald D. Wilkins reports that the policy here is to charge $5 in fees for the installation of the kitchen grinder. This was the result of information supplied by the building inspector and of consultation on the part of city sewage officials and local plumbing authorities. The chief reason for the fee was that installation of a kitchen grinder does away with refuse collection from the normal channels and transfers its transportation and decontamination to the sewage department. There also was the consideration that the city building inspector must inspect the installation for standard plumbing and building practices to insure against any cross connections.

Garbage down the sewer means less of a load for Raymondville's new Pakmore truck, manufactured by the Alamo Welding and Boiler Works, San Antonio, Texas. And there is always plenty of other refuse in growing cities like this one.

Allegheny County Announces Sewerage Program

AFTER two years of concentrated study, the Allegheny County Sanitary Authority has come forward with a program of sewage treatment that will serve the Pittsburgh, Pa., metropolitan area.

The report delivered by John Laboon, Authority chairman, recommends a plant furnishing primary treatment with preaeration and provision for chlorination. Studies indicate that this will provide sufficient treatment so that the effluent may be discharged safely into the Ohio River below Pittsburgh.

The plans also call for more than half the main interceptor sewers to be laid in the riverbeds. It is figured that all power for operating the plant will be produced by conversion of the sludge gas. This will save an estimated $20,000 per year. The required power, if purchased at present rates, would cost $225,000.

The complete estimated cost of $82,000,000 has been based on July 1947 price levels. A grant by the state of $800,000 would cover part of the total cost of preparing the plans and specifications.

The program would be financed out of service charges based on water usage, as follows:

First 100,000 gallons	18c per thousand
next 1,000,000 gallons	12c per thousand
next 2,250,000 gallons	9c per thousand
all over	7c per thousand

The minimum bill planned is 50c per month or $1.50 per quarter. In cases where water bills are rendered on a flat-rate basis, charges will be computed on 85% of the water charges. It is estimated that 98% of the householders will pay no more than $2 monthly. Participation in the plan depends on action by the municipalities in the Allegheny County area.

The Authority will request legislation for mandatory billing and collecting of service charges in conjunction with water billing. Without such legislation, it will be necessary to set up a separate billing agency.

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Town of Tonawanda, N. Y.	1944	100 "
Jacksonville, Florida	1945	120 "
Detroit, Michigan	1946	350 "
Washington Sub. San. Dist.	1946	150 "
Warwick, Rhode Island	1946	100 "
Winnipeg, Canada	1946	300 "
Babylon, Long Island, N. Y.	1946	90 "
Bedford, Ohio	1946	60 "
Cheektowaga, New York	1946	150 "
East Cleveland, Ohio	1946	100 "
Belleville, Ontario	1946	100 "
Beverly Hills, Calif.	1946	300 "
Toledo, Ohio	1947	100 "
West Bend, Wisconsin	1947	36 tons
Troy, New York	1947	250 "
Jacksonville, Florida	1947	350 "
Corning, New York	1947	80 "
Sao Paulo, Brazil	1947	200 "
Jefferson Parish, La.	1947	90 "
Meadville, Penna.	1947	80 "
Mt. Vernon, New York	1947	600 "
Town of Tonawanda, N. Y.	1948	90 "
Cleveland Heights, Ohio	1948	150 "
Columbus, Ohio	1948	150 "
Providence, R. I. (Hiler type)	1948	160 "

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Airports and Aviation

Airports Show Operating Profit

AIRPORT business is getting better, according to the International City Managers' Association. Operating revenues for 173 airports studied totaled $8,921,900 in 1947. Operating costs for these fields during the same period were $8,194,700. In 1946, substantially the same group of airports lost more than $1,000,000.

Miami's International Airport was tops in income among those reporting an operating profit. The big field reported 1947 revenues of $764,000 and expenditures of $384,000.

Dallas' Love Field reported $266,200 income and $132,000 outgo, while the comparable figures for St. Louis' Lambert airport were $148,600 and $69,200.

New York's LaGuardia Field took in more than any other airport last year but expansion of facilities with operating funds put the field in the red. LaGuardia spent $832,000 and received revenues of $636,400 for the six months ending November 30.

Newark airport took in $500,000 last year and spent $300,000. Both Newark and LaGuardia are operated by the Port of New York Authority. Other top airport incomes for 1947 were $325,000 for Oakland, $238,600 for Detroit, $224,100 for Los Angeles, and $216,000 for Kansas City. All reported an operating profit.

Eighty-four airports—49% of those reporting—finished 1947 in the black, while 88 reported an operating loss for the year. In 1946, only 36% of the airports reporting showed an operating profit. Airports queried both years belong to cities with a population over 10,000.

Twenty-six airports last year scored incomes of more than $100,000. Though this is still a small fraction of the total number, it is an 85% increase over 1946, when only 14 airports took in more than $100,000. Expanded operations of these major fields are setting the pace toward airport solvency.

Non-Aviation Revenue Makes the Difference

AIRPORTS are rapidly expanding restaurants, shops, and other terminal facilities to help pull them out of debt.

A study by the International City Managers' Association shows that fees from terminal concessions at 83 airports accounted for $1,136,500 in revenues last year. At 20 airports, 10% or more of the revenues came from non-aviation concessions.

LaGuardia Field in New York City offers at least a score of different non-aviation services ranging from beauty shops to banking facilities, including a clothing store, a post office, a drug store, newsstands, a photography shop, an observation deck, taxi and bus services, a barber shop, and auto park.

Fees from these concessions, including rent, provide LaGuardia with more than two-thirds of its income. Other revenue is derived from landing fees and aviation-service charges. Such charges directly on aviation activities used to be the mainstay of income at all airports and still are at many.

The Baltimore and Knoxville air terminals now have automatic insurance vending machines, from which the municipality derives an income. Hatbox Field, at Muskogee, Okla., and Cliff Maus Field, at Corpus Christi, have hotels. Cliff Maus Field has a theater.

Auto-rental services are available at Boston's International airport, the Lambert-St. Louis field, and Wold-Chamberlain Field at Minneapolis. Los Angeles air-terminal facilities include a hospital. Wold-Chamberlain also has a children's nursery.

San Francisco's municipal airport, meanwhile, has added non-aviation concessions that are expected to boost the field's annual income to $600,000 within the next year, according to the Municipal Finance Officers Association. Resale of electric power alone will net an estimated $200,000.

Model Shows Idlewild Construction

CONSTRUCTION details of New York International Airport (Idlewild), commercial activities of the Port of New York, and facilities operated in the area by The Port of New York Authority are three main themes dramatized at the Port of New York Authority exhibit at the International Air Exposition.

One feature was a "clamshell," the top of which depicts in scale a typical runway and taxiway intersection at the great new airport. The top is animated so that it alternately opens and closes to reveal underneath the runway section a transparent underground view of the airport showing in miniature the vital and costly utility installations.

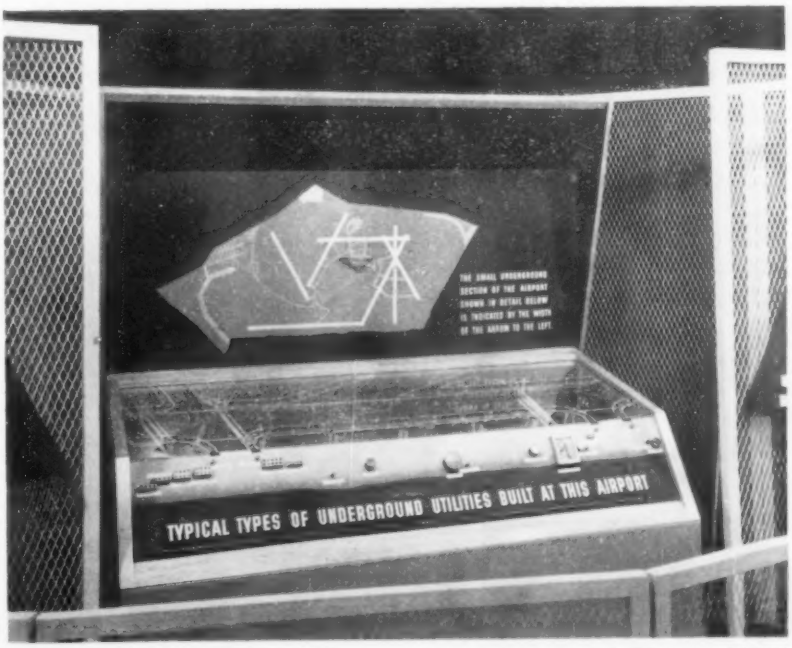
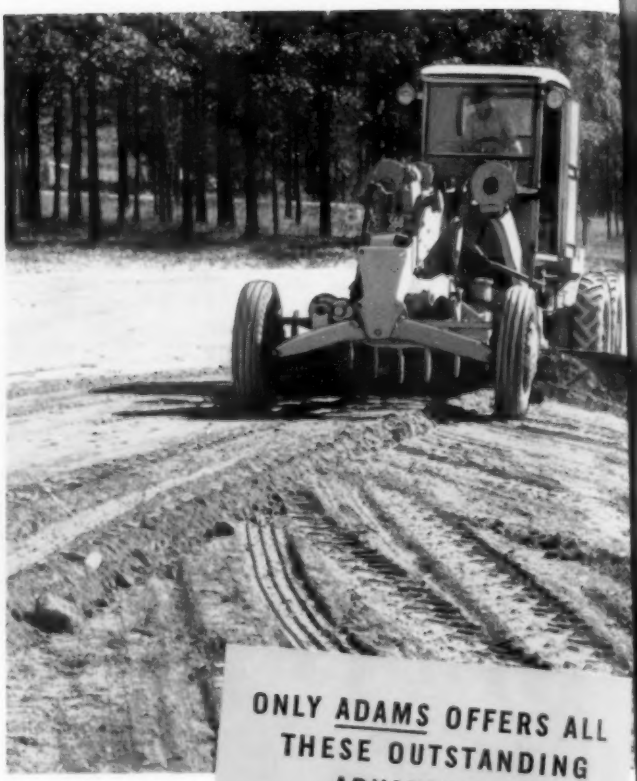


PHOTO COURTESY PORT OF NEW YORK AUTHORITY

A view of the "clamshell" model in open position showing typical types of underground utilities built at New York International Airport.

Adams advantages pay off in Kingsport, Tennessee



In Kingsport, Tennessee—as in hundreds of other cities—you'll find Adams Motor Graders hard at work on all manner of projects.

Adams Motor Graders are favored by so many cities because they are among the most flexible and useful machines a city can own. They are ideal for building, rebuilding and maintaining city streets and alleys—for backfilling over sewers, water mains and gas pipes—for grading around playgrounds, parks, municipal centers and parking areas.

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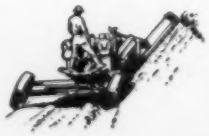

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Streets and Street Cleaning

Vibrating Roller Cuts Compaction Costs

PNEUMATIC-tired vibrating rollers are cutting substantially the cost of building such earth-fill structures as streets and airport runways. They similarly are able to produce economies in compacting dam fills, highway subbases and soil-cement stabilization work. H. C. Pollitz, chief engineer of the Iowa Mfg. Company in Cedar Rapids, pointed this out in a paper delivered at the American Road Builders' annual convention held recently in Chicago.

The method is limited to granular soils which will allow air and moisture to escape when pressure is applied and aided by the application of a sharp vibration. Vibrations vary between 700 and 1,400 per minute. The maximum depth of compaction appears to be 3 feet. In tests with the Cedarapids Compactor made by Mr. Pollitz's firm, it has been determined that below this depth the escape of air is reduced by the depth of the soil and the vibration has a tendency to be dissipated too much by returning vibrations.

Using the 60,000-pound Cedarapids Compactor has enabled operators to obtain additional densities of 3 to 10% by the use of vibration. On some of the recent rolled rock-base construction work it was found that the pneumatic-tired vibrating compacting rollers saved as much as 50% in time, with an additional savings on the use of blades and conventional types of rollers.

Here is one of Toronto's six Sicard snow blowers in action adjacent to an area where the snow can be blown instead of being loaded on trucks.

What Snow Blower Means in Labor

A SNOW blower gives a street-cleaning department the equivalent of 500 men and is able to do work under conditions which would be difficult or impossible for man-labor. So reports Harold D. Bradley, Street Commissioner of Toronto, Canada, in his recent annual report delivered to the city.

It is just as important, Commissioner Bradley states, to have adequately equipped snow-fighting machines as it is to maintain firefighting equipment, such as high-pressure pumps and hydraulic aerial ladders. The heavy-duty snow equipment takes care of the emergencies just as the big firefighting equipment takes care of the disasters.

Toronto uses 6 Sicard snow blowers, 3 Snogo snow blowers, and 1 Barber-Greene loader to help keep its 150 miles of business streets, highways, and bus routes clear of snow from curb to curb.

The vibrating Compactor at the recent American Road Builders show in Chicago.

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Public Safety

All Rockford Fire Apparatus Operates on Radio

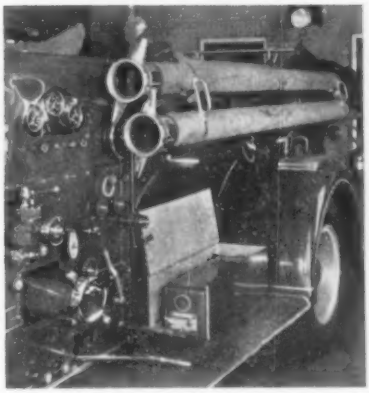
ONE of the first fire departments in the country to use a completely equipped two-way radio installation in the 152-162 mc band is in Rockford, Ill.

The 50-watt central station uses an antenna height of approximately 100 feet, giving more than sufficient coverage of the area under the department's jurisdiction. Rockford's population is approximately 100,000, and 14 pieces of two-way-radio-equipped fire trucks cover the city.

Capt. Paul Patton, in charge of installation and maintenance, has initiated the novel application of a carrier-operated relay in conjunction with the 16 mobile units equipped with 154.19 mc General Electric equipment. This relay operates only when a signal is received on the mobile receivers. It operates an amber light, like those used as clearance lights on trucks. The relay will also operate any other type of signal such as bells and horns. The visual indication is perceived during the noise and commotion at a fire.

The use of two-way radios at fires enables Chief Wayne E. Swanson and his two Assistant Chiefs, Thomas J. Haley and William N. Weir to direct their operations more efficiently by radioing the pump operator at the apparatus to raise or lower pressure as is necessitated by the circumstances. This saves taking a man fromthe fire and is a pronounced where pumping engines have to be located some distance from the fire.

Chief Wayne E. Swanson and his car with a General Electric two-way radio.



A waterproof case is necessary for the mobile units of this older fire engine.

Each alarm is verified by the called apparatus on the way to the fire. Constant radio communication is maintained, and where a false alarm or more than one fire occurs at a time, engines can be diverted, redirected, or returned to the station as the occasion demands.

Direct Action Saves Lives in Indianapolis

By EDWARD D. ROULS
Chief of Police
Indianapolis, Ind.

AUTHORITIES of Indianapolis, Ind., became fully conscious of the traffic peril back in March 1946. For in January and February of that year 15 persons were killed in traffic accidents —three in the daytime and 12 at night. Moreover, in 11 of those 12 night accidents, a driver or a pedestrian had been drinking too much.

The police chose two weapons, the traffic blockade and better street lighting. Five squads were organized, each consisting of a sergeant, three motorcycle officers and eight auxiliary officers. All these men reported at 8 p.m. and were sent to blockade locations of which they had received no prior information.

At each location, two officers signaled approaching cars to the curb, where the squad checked license, lights, tires, and the driver. The blockades were operated from 8 p.m. to 2 a.m. on Friday and Saturday throughout the remainder of 1946. Meanwhile taverns were visited by special squads, and both drivers and pedestrians were noted as to condition, and warned where necessary.

The result was that both drunken drivers and drunken pedestrians became quite scarce. Crimes also dropped sharply.

Meanwhile we started a study of street lighting. As told in "The Traffic Review" of Northwestern University Traffic Institute, officials from our Traffic Department, Power & Light Company, City Council, Board of Public Safety and the city lighting engineer drove the streets at night, checking intersections and other locations where numerous fatal accidents had occurred at night during the last five years.

As an example, one block of one of our main thoroughfares had been the scene of six fatal accidents in 1944 and 1945. Street lights at this location were found to be of much lower candlepower than they should be. We added new lights at this location in April, 1946, and it has been free of fatal accidents since that time.

During 1946 and 1947, the Board of Works added 1,400 new traffic safety lights in various under-lighted locations on the recommendation of the Police Department, and in each location our records show an approximate reduction of 46% in night traffic accidents.

Not only did improved lighting cut down the accident rate at these newly lighted locations, but also purse-grabbings and other late-at-night crimes decreased sharply at these spots.

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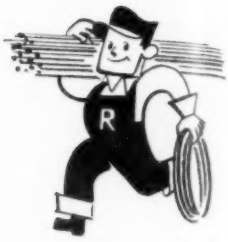

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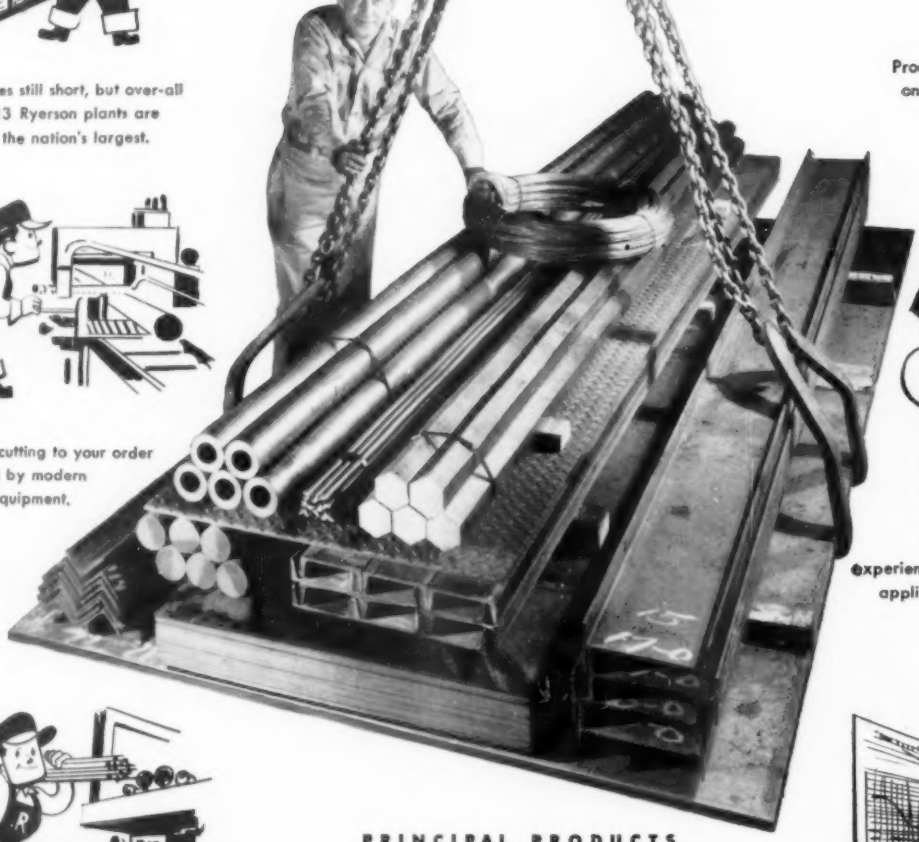

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OCTOBER 1948

Volume XLIII No. 10

The American City

Ephrata Sewage-Treatment Plant Develops

New Digester Techniques

By L. L. SPHAR
Parker and Hill, Consulting Engineers
Seattle, Wash.

THREE design targets were aimed at in the Ephrata, Wash., sewage-treatment plant, just recently completed.

The first covered automatic control. The design made this control virtually complete. The only daily manual operation required is that of turning a plug-valve during the automatic sludge-pumping cycle.

The second was trouble-free digesters. The design selected minimizes the possibility of scum formation and resulting loss in digester capacity.

The third was nuisance-free effluent disposal. Since no water course exists in this area, the plant must use leaching beds for effluent disposal. Consequently the sewage must be clarified thoroughly to prevent clogging the leaching beds, and must be disinfected to prevent contamination of groundwater.

Reclamation Project Caused Growth

The plant is one of the after-effects of this "capital of the Columbia Basin" boom-town growth. The growth began in 1939 when the Bureau of Reclamation established its irrigation headquarters here. Since then the community has grown from a little village of 950 to a healthy small city of 3,500. This rate of growth probably will continue for several more years, leveling off at an estimated ultimate of 8,000 to 12,000. The original plant, built for the needs of the small population, has been badly overloaded for some time. The effluent has been used for irrigation.

Effluent Disposal by Leaching

The need for special measures to dispose of the effluent exists because of climatic and geologic conditions here. The light precipitation passes directly into the gravelly overburden, which in this area covers the huge

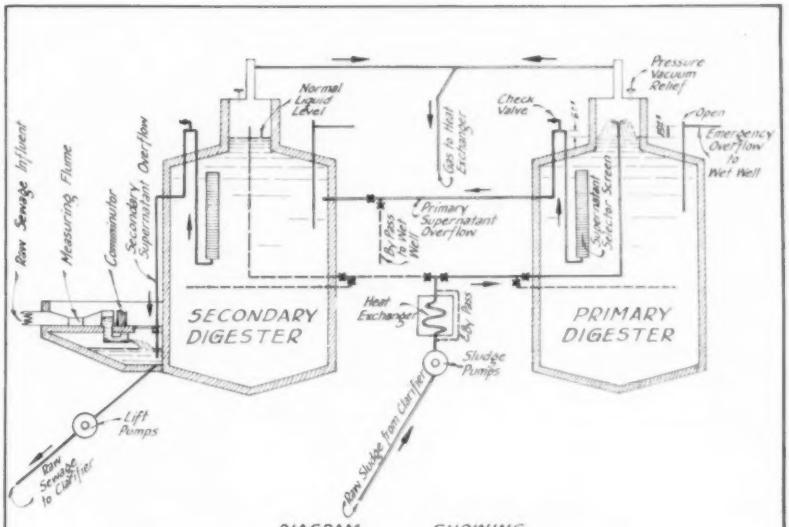


DIAGRAM SHOWING
SUPERNATANT TRANSFER & OVERFLOW
(SLUDGE TRANSFER & DISCHARGE PIPING NOT SHOWN)
Pumping Raw Sludge into the Primary Digester Provides Head to Cause Supernatant Flow as Shown.

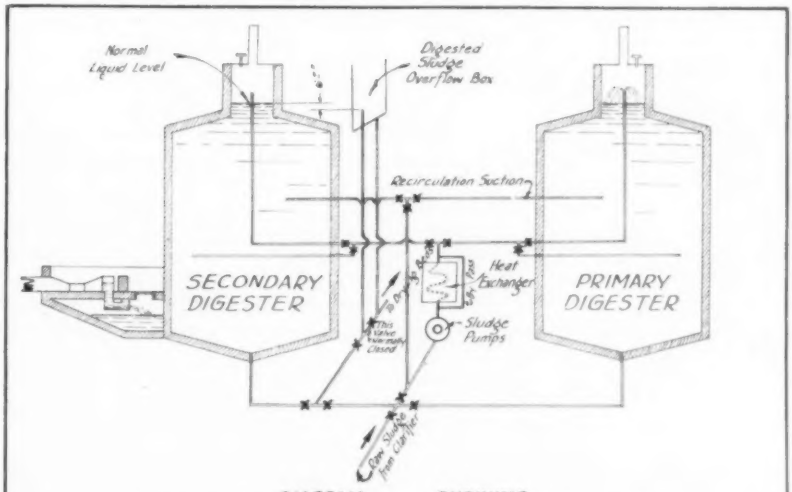
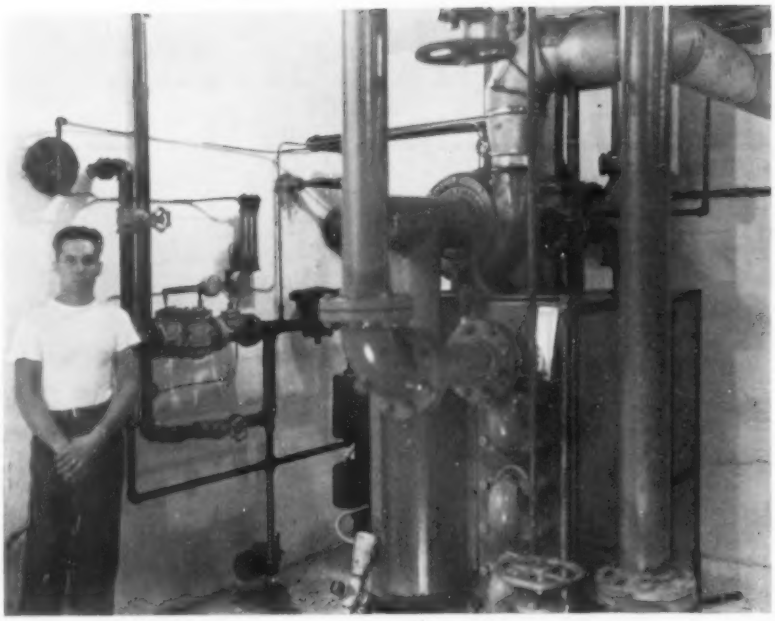


DIAGRAM SHOWING
SLUDGE TRANSFER & DISCHARGE PIPING
To Maintain Liquid Level within Close Limits, Sludge is Discharged to Drying Beds by Forcing it to Overflow Box on Roof. Raw Sludge is Pumped into the Digester to Provide Head. Sludge Transfer is Accomplished without Disturbing Levels by Utilizing the Recirculation Action as an Equalizer.



Harold Fox, operator, stands beside the P.F.T. heat exchanger unit.

basalt sheet of the Columbia plateau. There is no water course that can receive the sewage effluent. Also, once the reclamation program gets into operation, it will not be profitable to provide the amount of treatment and pumping necessary to reclaim sewage effluent for irrigation. Leaching into the soil is the remaining alternate. We selected a site about two miles south of the present plant in a gravelly sage-covered tract classified by the Bureau as totally unfit for development.

Much of the plant design follows present-day good practice. As the sewage enters the plant, it passes through a Chicago Comminutor, and its quantity is measured by a Parshall flume. Yeomans pumps then lift it from the wet well to the clarifier, where it flows through the rest of plant by gravity. Chain Belt flight collectors in the clarifier remove the sludge, and Yeomans sludge pumps transfer it to the digesters. These digesters use PFT supernatant selectors, possibly their first use on fixed-roof digesters. The sludge is dewatered on open drying beds.

The clarifier was designed to provide two-hour detention for average flow. Based on volumetric measurements at the existing plant, average and maximum rates of 100 and 200 gallons per capita per day were chosen for design. The clarifier is 16 feet wide, 65 feet long, and averages 8½ feet deep.

Sewage enters the clarifier through two 8-inch pipe ports at mid-depth that direct the flow against the end wall. Horizontal steel aprons support the piping and prevent scouring of sludge from the hoppers beneath. Two effluent troughs located well away from the effluent end of the tank in what is normally the clearest zone provide 64 feet of weir for low-velocity overflow. Scum is intercepted with a baffle attached to a very shallow submerged trough. This device has its weir just under the effluent weir level.

The scraper mechanism periodically operates a lever which lifts a 6-inch disc valve in the trough bottom. The resulting flow empties the shallow trough and draws the scum over the weir and into a scum hopper. This is a scum-removal method belived to be original and applied first in the Ephrata plant.

Leaching Galleries

Clarifier effluent will be conducted to a manhole having outlets into three leaching galleries. These are trenches which have been excavated into gravel strata of sufficient porosity, then backfilled with coarse gravel over a layer of split tile. The coarse material is topped with mixed gravel and silt and leveled off at grade. The trenches could have been left open, but it was felt that the construction employed would have several advantages. It will prevent windblown silt and tumbleweeds from clogging the gravel pores. Growing weeds can be controlled more easily than in a trench and the area made generally more pleasing than would be the case with open trenches.

Small-scale leaching tests in a preliminary excavation formed the basis for the size of the galleries. To handle peak flow for 8,000 population each gallery was made 11 feet wide at the bottom and 50 feet long. They all are about 16 feet deep. Larger-scale tests were made and the completed excavations indicate an actual capacity of about 7½ gallons per square foot per minute. At this rate, each gallery is capable of handling four times the total anticipated peak flow for the design population.

Gradual decrease in capacity may occur because of clogging, but good clarification is expected to insure the serviceability of the galleries for a long time.

Automatic Operation

As mentioned previously, the plant emphasizes automatic operation; B/W Controller electrodes suspended in the wet well control the lift pumps. The pump controls also actuate a solenoid valve on the water supply to the chlorinator, so that the apparatus, a constant-rate Wallace and Tiernan machine, delivers chlorine to the clarifier influent only when pumping is in progress.

A Paragon time clock operates the sludge-scraping mechanism in the clarifier and another operates the sludge pump, which is normally set to pump from the clarifier to the primary digester. A relay starts the sludge recirculation pump each time fresh sludge is pumped. Valves are positioned so that fresh sludge is preheated and seeded through mixing wth warm recirculated primary sludge before the mixture is passed through the PFT heat exchanger and on into the primary digester.

Thermostatic controls also operate the sludge recirculation pump as required to maintain the proper temperature in the primary digester. A room thermostat controls a hot-water circulator, which pumps hot water from the heat exchanger through a copper-coil radiant-panel system in the floor of the control room.

Supernatant flow from the primary to the secondary and from the secondary to the wet well is accomplished by simple displacement as new sludge is added. This arrangement, which is best explained by the diagram, is expected to provide a valuable daily re-seeding of the unheated secondary-digester contents. A high-pressure backwash pump system is provided for occasional backwashing of the supernatant selector screens.

Digester Level Remains High

Digester liquid levels will be maintained in the gas-tower sections during all operations. Thus all scum except 9 square feet in the center of each tank will be continuously submerged, a condition known to be effective in keeping scum soft and actively digesting. In addition the unsubmerged primary scum will be moistened automatically several

times daily by warm recirculated liquid from mid-depth. The contents of the secondary tank can be recirculated in the same way, probably as a weekly manual operation. The effectiveness of this method of scum control is well known, having been thoroughly demonstrated as long ago as 1929 by Dr. A. M. Buswell.*

The determination to maintain the digesters continuously full led to some interesting problems in piping arrangement. The operator can transfer sludge from primary to secondary without change of level by operating a 3-way plug valve to open an equalizing line between the two tanks through a riser pipe with overflow only a few inches below normal liquid level. After valving off all other piping, the sludge pumps provide hydrostatic head as they pump raw sludge from the clarifier, thus forcing digested sludge out and onto the beds. Both tanks are provided with emergency overflows and with pressure-vacuum reliefs.

Digester Insulation

Insulation in the primary tank is unique. Pittsburgh-Corning Foamglas blocks were fastened to the inside forms prior to placing reinforcing steel. Brass rods, ⅛ inch in diameter and 5 inches long, were stuck into the back of the Foamglas at varying angles to lock the material to the concrete. Six rods were used in each block. Forms and reinforcing were then completed and concrete poured. It was found that mortar which filled the joints between 12-by-18-inch blocks together with the brass rod holds the insulation in place firmly. A few of the blocks were found cracked upon stripping, but none was loose. By its nature, this material cannot become waterlogged, and since there will be no mechanical action to disturb it, the result is a permanent insulating layer, inside and out of sight, inexpensively installed. It is believed to be the first installation of its kind ever attempted.

To provide a gas-tight membrane and a smooth surface easy to squeegee, a heavy layer of Dearborn Chemical Company No-Ox-Id #6-X was applied over the Foamglas, and over the inner concrete surface of the secondary tank as well.

Construction was begun in August 1947. The construction cost will be $74,719. This does not include engineering, financing, sales tax, or the value of items salvaged from the old plant.

The plant is being built by Nyanza Construction Company, Tacoma, Wash.; E. E. Friegong is General Superintendent. The work was designed and construction supervised by Parker and Hill with Arnold Pontius serving as Resident Engineer. Mr. Pontius has been retained to act as city engineer upon the completion of the project. The engineers of the Washington State Health Department made many valuable suggestions during the design of the project. The recommendations of W. T. Eiffert, District Engineer, were particularly helpful.

* See *Industrial and Engineering Chemistry*, April 1929.

Towards a Cleaner and Brighter Pittsburgh

Pa Pitt and six pretty girls with their multi-colored plastic brooms dramatize Pittsburgh's year-round "Clean Up, Paint Up, Fix Up" campaign.

IT WAS not many years ago that a native of Pittsburgh was alleged to have said that he first saw the light of day at the age of five, when his family moved to New York.

Hand in hand with Pittsburgh's subsequent progress towards smoke elimination, as recorded in verse and comment on page 5 of this issue, is the campaign for a cleaner city in which a privately financed committee, "Pa Pitt's Partners," and the Mayor's Committee for a Cleaner City are taking the lead.

Reporting last month on Pittsburgh's year-round Clean Up, Paint Up, Fix Up Program, the Chairman of Pa Pitt's Partners, Adolph W. Schmidt, vice-president of T. Mellon & Sons, told of what has been done and what is scheduled to be done. In brief:

1. More than 9,000 tons of trash have already been collected this year in the block-by-block clean-up.

2. More than $1,000,000 is being spent in brightening up the Golden Triangle business district, including the "washing of 50 years of smoke off Pittsburgh's municipal face."

3. James F. Hillman, Chairman of the Mayor's Committee, reports a plan to establish four small recreation areas, or "parklets," in neighborhoods where they are most needed by younger children and by older persons who lack facilities for relaxation.

4. Pa Pitt's Partners have secured the cooperation of the railroads entering Pittsburgh in a drive to improve the appearance of the approaches to the city, thus giving visitors a better impression.

5. A committee headed by Mrs. Andrew E. Sloan, is formulating a program to be undertaken by garden clubs and other women's groups to encourage home improvement and neighborhood beautification jobs.

6. The Pa Pitt's Partners Committee on Dealer's Groups is actively at work arranging window displays, promoting the use of paints, hardware, planting, and clean-up material throughout the city.

7. Finally, the main objective of the campaign is education for cleanliness. "At this point," said Mr. Schmidt to the people of Pittsburgh, "I think we ought to bring up the old story, the old excuse, 'It's the city's job to clean the streets.' That is quite true. And the city does clean the streets. But that fact does not excuse you from constantly adding to the litter through carelessness. It does not excuse anyone from blame (and also from a fine) for sweeping dirt and litter into the street from the sidewalk.

"When you sweep . . . pick up the dirt and put it in a container. And sweep often. Just bear in mind that it is also the city's job to put out fires. . . but that does not excuse you from being careless with fire or actually starting blazes just because it is 'the city's job to put it out.'

"You have a personal responsibility as a citizen. As one citizen to another, we Partners of Pa Pitt are asking you to know and live up to your responsibilities."

Housing and Health

By BLEECKER MARQUETTE
Chairman, Joint Committee on Housing and Health
American Public Health Association and
National Association of Housing Officials

"HEALTH is defined as a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity." This is the definition of health adopted by the World Health Organization. Health, in this broad sense, could not possibly be unaffected by the environment in which people live.

The National Health Assembly, participated in by the nation's health leaders, stated the case in these words:

"Health cannot be achieved merely through a medical approach, as adequate housing, a living wage, good working conditions, education, recreation, and other facilities are all involved in physical and mental well-being."

The American Medical Association and many state and local medical societies have indicated their conviction of this relationship by including housing betterment prominently among their health objectives.

1. The Academy of Medicine of Cincinnati has recently published a forceful report setting forth the devastating effects of bad housing on health and urging action to improve housing conditions.

2. In its "Basic Principles of Healthful Housing," the Committee on the Hygiene of Housing of the American Public Health Association has established 30 ways in which housing does affect health.

Virtually every health authority of note recognizes this relationship. The case is set forth succinctly by two of them in the following paragraphs:

3. Bad housing, as a matter of practical fact, is profoundly detrimental to health; and the existence of slums is a health problem of outstanding significance."—*Dr. C.-E. A. Winslow, Past President of the American Public Health Association.*

4. "When housing is associated with dampness, inadequate warmth, darkness, poor ventilation, accidents, vermin and rodent infection, lack of sanitary conveniences, and overcrowding, it does affect the health of the occupants directly, both through the transmission of infection and through the debilitating effects of an unfavorable environment."—*Dr. Murray P. Horwood, Professor of Bacteriology and Sanitation, Massachusetts Institute of Technology.*

Numerous studies have provided significant evidence on this subject. Reference can be made to only a few of them here.

Relationship to Physical Health

5. A close relationship between the degree of room overcrowding and the incidence of pneumonia has been demonstrated.

6. Increased incidence and deaths from tuberculosis are related to houses unsuitably constructed and occupied by an excessive ratio of persons to rooms.

7. Rheumatic fever incidence correlates with poverty and bad environment—especially damp and crowded housing.

8. The frequency of illness, disabling for a week or longer, is greater the more crowded the household. Digestive diseases show a marked excess for persons in households without private inside flushed toilets.

9. Health indices in housing projects and three control groups elsewhere showed new cases of tuberculosis for the project tenants to be one-half that of the control groups in a two-year period. During that period the rate for the projects decreased and the rates for the control groups increased.

10. Among a group of high-school girls, the incidence of rheumatic heart disease was found to be nearly twice as high for a school in an economically poor area of substandard housing as in one whose students came principally from a good residential area.

11. A searching study of mortality by race, age, cause of death, and economic status made in Cincinnati covering the three-year period, 1939-41, showed death rates of white people in areas of low income and substandard housing compared with better areas of the city to be as follows:

3 times the rate from tuberculosis.
2½ times the rate from pneumonia.
2 times the rate from accidents.

The rate of dying among white infants was twice as high. The same disparity had been shown in similar studies made 10 years previously. This disparity did not decrease during the 10-year interval.

Similar contrasts were found for Negro death rates in the lower and the higher economic areas.

Relation to Mental Health

12. The Committee on the Hygiene of Housing states that "more damage is done to the health of the children in the United States by a sense of chronic inferiority due to the consciousness of living in substandard dwellings than by all the defective plumbing which these dwellings may contain."

13. A study of psychiatric rejections among 60,000 men during the second world war showed a much higher rate of rejections among men from areas with low incomes and poor housing.

14. The incidence of mental illness among a large group of patients admitted to state hospitals and private sanitoria in Chicago was found to be six times greater among patients from deteriorated areas of the city than among those from the better outlying areas.

15. "Both psychoses and neuroses seem to be most prevalent in the lowest socio-economic class of the white population."

16. Dr. Arnold Gesell, noted child psychologist, finds that "overcrowding takes a terrible psychological toll" and that in crowded homes children develop anxieties and perplexities. He states that the answer lies "in better housing and increased economic security."

17. Dr. William Menninger, one of the nation's leading psychiatrists, points to the dangerous effects of the present housing shortage, stating: "The resulting dislocation and family friction comprise an enormous cost which will be paid for by those whose personalities cannot withstand the excessive strain."

Conclusion

Health is, of course, affected by many factors other than the physical environment—income, education, medical care, nutrition, occupation, heredity, physical constitution, emotional stability, presence or absence of friction in the home. No informed student of the problem would maintain that housing plays the most vital role.

The obvious complexity of the problem makes it extremely difficult to isolate a single pre-disposing factor such as the physical environment.

There is no need, however, for further surveys of the effects of housing on health simply to produce additional arguments for housing improvement any more than we have to have an exact measurement of the effects of income, which is almost always a concomitant of poor housing, to know that poverty is related to ill health, both as a cause of it and a result of it. The evidence of experience and common sense; the testimony of outstanding health authorities; the numerous studies showing that high rates of mortality from preventable causes of death invariably prevail in slum areas and that the disparity between the rates of dying among badly housed, low-income people and the rates for more favored

people persists from decade to decade—these facts offer convincing evidence that housing is a factor in health. What we do not know and cannot yet measure is exactly how and precisely to what extent the impact of the physical environment is reflected in the physical and mental health of people.

References

(Numbered to correspond with numbered paragraphs above.)

1. "Improved Housing and Slum Eradication"—*Cincinnati Journal of Medicine*, 29, 271 (1948).
2. *Basic Principles of Healthful Housing*—Committee on the Hygiene of Housing, American Public Health Association, May 1939.
3. "Housing and Health"—*Housing for Health*—Committee on the Hygiene of Housing, American Public Health Association, 1941. Pages 7-17.
4. "Housing and Health"—Murray P. Horwood, Ph.D., *The Commonwealth*, Massachusetts Department of Public Health, Vol. 25, No. 2, April-June 1938. Pages 95-102.
5. "The Influence of Overcrowding on the Incidence of Pneumonia"—Julian E. Benjamin, M.D., James W. Ruegsegger, M.D., Fanny S. Senior, *Ohio State Medical Journal*, December 1940.
6. "Health Benefits To Be Expected from Better Housing"—Haven Emerson, M.D., *Proceedings of National Conference of Social Work*, May 1936. Pages 569-578.
7. *The Epidemiology of Rheumatic Fever*—John R. Paul, Metropolitan Life Insurance Company, New York, 1930. *Rheumatic Heart Disease*—Carey F. Coombs, J. Wright and Sons, Bristol, 1924, page 22. "Rheumatic Fever as a Familial Disease"—May G. Wilson and Morton D. Schweitzer, *Journal of Clinical Investigation*, 16:555-557, 1937.
8. *Certain Characteristics of Urban Housing and Their Relation to Illness and Accidents: Summary of Findings of the National Health Survey—Milbank Memorial Fund Quarterly*, March 1940.
9. *The Social Effects of Public Housing*—Dr. Jay Rumney, Professor of Sociology, University of Newark, and Sara Shuman, M.A., the Authority's Research Associate. Housing Authority of the City of Newark, November 1944.
10. "Prevalence of Rheumatic Heart Disease in Denver School Children"—Bernice G. Wedum, M.D., Arnold G. Wedum, Ph.D., M.D., and A. L. Beaghler, M.D., F.A.P.H.A. *American Journal of Public Health*, Vol. 35, No. 12, December 1945.
11. *A Story of Life and Death in Cincinnati*—Floyd P. Allen, M.D., The Public Health Federation of Cincinnati, October 1947.
12. *Basic Principles of Healthful Housing*—Committee on the Hygiene of Housing, American Public Health Association, May 1939.
13. "Studies in Medical Sociology: Relation of Mental Disorders to the Community Socio-Economic Level"—R. W. Hyde and L. V. Kingsley, *New England Journal of Medicine*, page 231, October 19, 1944. Pages 543-548.
14. *Mental Disorders in Urban Areas—An Ecological Study of Schizophrenia and Other Psychoses*—Farris and Dunham. University of Chicago Press, 1939. Page 270.
15. "Mental Hygiene Problems in an Urban District"—Second paper. Paul Lemkan, M.D., Christopher Tietze, M.D., Marcia Cooper, *Mental Hygiene*, Vol. XXVI, No. 1, January 1942. Pages 100-119.
16. *Child Development in the Culture of Tomorrow*—Arnold Gesell and Frances L. Ilg. Page 360.
17. *Atlantic Monthly*, January 1948.

Michigan Municipal League Celebrates Golden Anniversary

PROPOSALS for forward-looking new activities, as well as tributes to past accomplishments, highlighted the golden anniversary program of the Michigan Municipal League on Mackinac Island, September 8-11. More than 500 persons attended the well-organized meetings of the League, recognized as one of the most successful bodies of its kind.

Utilities Bureau Proposed

The already extensive services offered by the Michigan League to its member municipalities will be greatly augmented if one recommendation, made by Orph Holmes, city attorney of Ferndale, is acted upon. Mr. Holmes proposed that the League establish a utilities bureau to prepare reports and surveys on various problems relating to municipally owned utilities and on such matters as rate cases involving private utilities operating within municipal boundaries. He said that smaller municipalities would then, with the services of a utilities bureau, be able to present properly the municipal and public-interest point of view concerned in rate cases, and also have access to sources of expert testimony needed in appearance before the State Public Service Commission.

Resolutions on the following subjects were among those adopted by the League: Reapportionment and more equitable representation for municipalities in the state legislature; continued study of annexation procedures; complete revision of the state constitution; opposition to an amendment which would deprive municipalities and school districts of state sales-tax proceeds; revision of state highway laws; greater revenue-raising powers for municipalities; consultation with local interests on the formulation of civil-defense policies, and raising the salaries of state legislators and administrators for purposes of promoting better government within the state.

Governor Kim Sigler demonstrated sympathy toward the municipal viewpoint in his address to the League. Commenting on the rapid increase in urban population, he asked, however, that municipal officials recognize the similarity of interest in both their own and the state's problems. He deplored the financial mess in which the state finds itself, and stressed the importance of streamlining the state government to consolidate the functions of its 110 boards, bureaus, agencies, and commissions.

The League's early history and struggles were recalled during a dinner meeting in honor of the late Harold D. Smith, who had served as the first full-time director after its extensive reorganization in 1928, and before his association with national and international organizations. Past presidents of the League were introduced by Jay F. Gibbs, City Manager, Ferndale, and League president, 1946-48.

"What Can Municipalities Do About the Fringe Area Problem," a panel discussion chaired by Prof. Arthur W. Bromage, University of Michigan, was one of the outstanding sessions of the conference. The accelerating movement of people and industry beyond municipal jurisdictions was outlined, and the need for closer cooperation and understanding between the central city and its surrounding communities was emphasized. The broad public interest of the people in the whole metropolitan area should be considered, rather than just that of a particular political jurisdiction, when utility construction and expansion programs are contemplated, the panel concluded.

Some other items of key interest discussed at the conference included: municipal public relations and how to make the people see the municipal problems; the importance of comprehensive planning in the programming and financing of public improvements; the wide extent to which the national interest is related to local activities; the degree to which municipal employees should be asked to back programs designed to influence state legislative action; revenue bonds; off-street parking; recreation needs; street and highway programs and civil defense.

An excellent paper on techniques municipal officials can use in "Determining Citizen Attitudes" was presented by Everett Reimer, consultant at the Survey Research Center in Ann Arbor. John Iglauer, assistant director of the League, outlined a detailed report on the reapportionment problem in Michigan, showing exactly how municipalities are now under-represented. Among the several specific changes proposed is one which would make the Secretary of State responsible, through administrative action, for periodic reapportionment on the basis of population.

Reports on the conference and its various sectional meetings will be contained in the League's annual *Proceedings*. Herbert A. Kurrasch, Mayor, Alpena, was elected president of the League for 1948-49 to succeed Mr. Gibbs. John H. Huss continues as Director of the League.

"Hartford Looks at Snow Removal"

Plows operated in tandem clear wide streets handily in Hartford, Conn.

A study of methods used during last year's storms, the greatest in its history, gives a guide to good snow-removal practices

By ROYAL W. THOMPSON
Superintendent of Streets
Hartford, Conn.

THIS offers an analysis of snow-removal work in Hartford as it occurred last year, during the worst winter in its history as a metropolitan city. No system has an opportunity to prove itself until it has met its period of greatest stress. This came to us last winter.

The first phase of snow fighting is that of an adequate warning. We utilize the services of the U. S. Weather Bureau branch located here, which is handicapped, however, by its limited facilities.

Private Weather Service Proves Value

To supplement this service we subscribe to the Cullman Weather Service located in Boston, Mass. This is a private weather bureau that has been more or less guaranteeing, and providing, 95% accuracy on 36-hour forecasts. The service cost us $375 for the winter season. We have more than saved this cost in overtime and in the use of rock salt and abrasives.

The next step is organization. All our snow-removal operations are centralized at the Yard office. The only district work is sanding the residential streets and intersections and clearing crosswalks, catch basins, and walks adjoining city-owned property and bridges.

Refuse Collection Kept Intact

We do not draft refuse-collection forces. The operation of ashes and refuse removal must be continuous. Loss of even one day's work on this operation throws the entire crew of some 141 ash-and-refuse employees into expensive overtime work.

For the same reasons, we have discontinued using a few of the ash and rubbish trucks for snowplow work.

There is no attempt to use other city employees on snow-removal operations. A few years ago, the city would employ 200 to 300 hand shovelers to clean crosswalks and do hand shoveling on loader routes. This has been discontinued for the past three years. This type of labor, in my opinion, is the most inefficient help possible. The curve of that inefficiency increases in direct proportion to the number of men so employed.

Our use of radio is, perhaps, not as complete as it could be. We do not have a short-wave set for use within our own department. On the basis of last winter's experience we have arranged with the Police Department to place a radio cruiser outside our plow-dispatching room at the Yard, thus enabling us to coordinate plowing operations with the operations of the police in posting and removing cars from streets to be plowed. We also employ the local radio stations for alerting and warning the public of all parking bans to be enforced during storms. The cooperation of the local stations has been excellent.

When we decide to plow the downtown area and the main arteries, we arrange with the police for "no parking" controls and for the use of their

tow service. Tow service is operated for the Police Department by private contractors; the fee for towing is $3.00, to which is added a $1.00 fine.

Hartford's total street mileage is approximately 200 miles. Of this, roughly, 125 miles represents the downtown area, the main arteries leading into and out of the city, the secondary streets or traffic feeders, and the hills in the residential areas. These 125 miles present an entirely different snow-and-ice-control problem from the remaining 75 miles of strictly residential streets. We have found it best to plow during the hours of 12 midnight to 6 a.m., when traffic is at a minimum. Our general policy has been to plow the 125 miles as a separate operation. As soon as 1 or 2 inches have fallen, we cover the 125 miles with ½ to 1½ tons of rock salt per mile. This insures that the snow will either melt or remain in a mealy condition that will not bond or freeze to the pavement. It also saves sanding each intersection. The traffic, crossing a salted street, carries enough salt to the intersecting street to melt it or maintain it in a safe condition.

If the storm ends towards midnight, we plow the main arteries and the downtown region first, so that the loader operation can start at 7 a.m. the next day. Then we send our plows out and clear the residential areas. Again we might reverse the procedure and plow out most of the main arteries and residential and outlying areas and then dispatch all our plows to the center district at 12 midnight, after the cars have been removed, and clean out the center section. Plowing in the city can be completed in 12 to 18 hours.

Rock Salt Speeds Work

For the past three years (a period which includes a storm of 18 inches in 24 hours and another of 17.7 inches in 24 hours occurring 10 days later), the use of rock salt has made it possible to maintain normal or nearly normal business except for that retarded by the storm within the city. Clearing off the snow was done between 12 midnight and 6 a.m. and gave the stores and the merchants nearly normal operation the next morning.

We operate our trucks on the salt routes, totaling about 125 miles. The Street Department itself owns and uses two highway spreaders, permanently installed on their own chassis, and 8 Birch spreaders attached to Street Department trucks. In addition to this, the local bus company cooperates with the Department in the control of snow and ice conditions. They contract for and hire eight trucks to be used in salting and sanding a portion of the routes that are assigned to them. They also furnish six trucks equipped with snow plows that are assigned to regular routes and are dispatched when our plows are dispatched. At the present time their eight salting and sanding trucks are equipped with Good Roads spreaders.

Standard Equipment

We use 10 city-owned trucks and 33 contract trucks. These, in addition to the six furnished by the bus company, make a total of about 49 plows. We are working toward a complete fleet of Good Roads #721 plows with hand lifts or Good Roads 720B plows with Westinghouse air lifts where the trucks so equipped are available.

Royal W. Thompson

I am convinced that in most cases we are better off to hire our trucks. A truck undergoes a terrific strain and has many breakdowns in the work. The present rate is $6.00 per hour. This includes the truck, the driver and the fuel.

How Plowing Is Coordinated

There are 21 plow routes on which the city-owned and contract-hired plows operate. These are headed by a main artery, followed by secondary streets and the less-traveled residential streets. After the plows are dispatched, their operation is, in one sense of the word, split into three districts. A plow rider is assigned to each district, in a separate car, to report work progress. If we find one route in difficulty, and another going through much more rapidly, we immediately send out another set of route cards and plows to the route that is lagging. The plows from the route that is completed first are immediately sent to the routes at the bottom of the list which have not yet been cleared. The coordination and operation has been excellent.

In addition to the equipment mentioned, we also use two Walter Four Wheel Drive trucks equipped with center-pressure blades for special ice removal, a new Allis-Chalmers motor grader, an Austin-Western 77 grader purchased in 1940, and three Case DI tractors equipped with plow blades and rotary brooms or sweepers. We also own and operate two Haiss snow loaders, four Nelson loaders, three Barber-Greenes and one McCormack Deering.

To cart away the snow we specify a truck with a minimum body of 3 cubic yards, water level, before the side boards are added. This was adopted last year to eliminate 1½-cubic-yard body trucks which were underpowered and caused considerable confusion and disturbance in the snow dumps. The adoption of the larger-size minimum on the truck has materially reduced the cost of this operation. I believe that our costs this year will not be over 15 cents per cubic yard.

The number of trucks assigned to a loader varies with the conditions as they arise. During the last clean-up of the very heavy accumulation of snow, our loaders were able to keep 10 trucks per unit busy. In other words, we used 90 to 100 trucks a day and operated 12 to 13 hours. We have not found it economical to continue the operation for the 24-hour period. It takes too much out of the men and it is too difficult to check the truck during the early morning hours. We dispose of the snow in four or five areas within 1,000 to 5,000 feet of the point of the snow pick-up.

We own four bulldozers—an Allis-Chalmers HD7, a Caterpillar D-4, D-6, and D-7—that are withdrawn from other operations and assigned to the snow dumps to keep them in condition so that the trucks can operate easily.

Last winter we used nearly 1,600 tons of salt. There are two suppliers in the district, the International Salt Company and the Chemical Corporation. We pay approximately $11 per ton in bulk delivered, including freight. Through an arrangement with the electric utility, we are able to use, without charge, one of their coal-unloading trestles, and we request that the salt be shipped in open gondola cars or closed cement cars. These are pushed out to the siding and the salt loaded directly into our trucks. With three trucks and about five men, it is possible to unload about 180 to 240 tons a day. It is stored in open-sided sheds at our yard and loaded on the trucks with our snow or bucket loaders. This price compares with that of about $18 a ton paid by the State of Connecticut for salt received in 100-lb. bags shipped in box cars, about 40 tons to the car.

We also use the sand and salt mixture in our sandboxes, of which there are approximately 550 distributed throughout the city. We encourage the householder to take sufficient salt to maintain his main sidewalk in a safe condition. By this means, we have reduced claims presented against the city as a result of falls from more than 200 in the past to less than 100.

Riverside, Calif., Water Department Makes

A Cost Calculation

Covering 35 Years of Operation

By L. W. GRAYSON
Superintendent of Utilities
Riverside, Calif.

MUNICIPALLY operated water service in Riverside began in 1913, when the city purchased and united three domestic water systems into one utility. This required a general bond issue of $1,160,000, together with a $30,000 transfer from the Electric Department Depreciation Sinking Fund.

Since then, the problems of the Water Department have centered around this bonded debt, and the goal has been to lift the financial burden of the initial 1913 bond issue and a subsequent bond issue in 1926 in the amount of $258,000.

The conclusion of the fiscal year on June 30, 1947, shows how we have approached this goal. The assets of the Water Department are $4,012,416. During the year the total revenues amounted to $379,738, and the current cash balance as of June 30, 1947, was $391,868.

New construction completed during the year amounted to $240,752, somewhat in excess of the net income of the Department for the year. During the war, when federal regulation prevented construction, no transfers of surplus were made for general city use. Therefore, the department accumulated a total cash balance of $4,000,000 and the bonded indebtedness as of the date of the annual report was retired to approximately $256,000 from the earnings of the Water Department, with the exception of the $30,000 transfer heretofore mentioned from the Electric Department sinking fund.

Dollar Revenue Division

Summing up, the revenue dollar received by the Water Department indicates that production expense required 6 cents, distribution expense 9 cents, commercial expense 7 cents, general expense 6 cents, depreciation expense 13 cents, new construction 63 cents, interest payments 14 cents, material and supplies increase 9 cents, or a total of $1.31, indicating that in addition to each dollar received, 31 cents was withdrawn from previously earned surplus to carry new construction costs.

Resolving the necessary portion of the foregoing figures for current problems, we have determined from some 12,469 services that there is represented in capital investment, using the undepreciated book value adjusted to current labor and material costs, an amount of $354 per consumer. When a consumer files his application for water service, together with the necessary payment of charges, our department automatically makes a commitment of $354, less such charges as have been paid. The Department further is committed to supply to the consumer approximately 800 gallons of water per day or 292,000 gallons each year.

In the picture to the left we see workmen hanging the casing in a Riverside, Calif., well construction job. The picture on the right shows a new artesian well which was drilled in 1947. From this well 6½ mgd are flowing.

In the future, distribution-system expansion probably will not be a major problem. The chief requirement more likely will be for additional production facilities, increased transmission pipelines, construction of treatment works for anticipated necessary water treatment, and increased storage facilities.

The current service and extension regulations applying to Department operations, wherein it has been determined that a reasonable percentage of the burden of capital outlay has been placed on new consumers, are found in the following:

New Services

Services will be installed to property within the confines of the City of Riverside served by this Department upon application at the main office of the Department and the subsequent payment of the established charges, providing that said property to be served fronts on or is adjacent to a public roadway or right-of-way where the Department maintains a standard domestic water line, and further provided said service shall be for one consumer only.

1. In addition to the established service-installation charge, each applicant for water service to property not now served who has not, either in person or through his predecessor in interest, paid a water-main construction charge or the equivalent thereof, shall, before such application will be accepted, pay to the Department a water-main construction charge of $1 per foot of frontage of the property to be served but not less than $50.

2. In cases where the service to the property of the applicant will be from a standard domestic water line installed under the provisions of a current water-main extension contract providing for rebates by the City to the consumer, as defined therein, the applicant will be required to pay the established water-main construction charge.

3. In cases where the property to be served is irregularly shaped and a water-main construction charge is required to be paid the amount thereof shall be $50 for the first 6,000 square feet of the lot or parcel of land to be served plus 50c for each additional 100 square feet or fraction thereof.

If there be no such main as defined under Rule and Regulation No. 17 (above), application may be made at the main office of the Department for the extension of the necessary water lines to reach the property to be served and extensions may be made by the Department only when the provisions of this regulation have been complied with.

1. For extensions to serve properties not covered by part (2) of this rule and regulation, the applicant will be required to deposit the estimated cost of said extension less the cost of 75 feet of said extension for each additional permanent consumer served. Said deposit so determined being subject to refunds as provided in standard Water Main Extension Contract form for a period of five years in the event of additional consumers being served from said extension.

In addition to the deposit as herein required each consumer shall, before such application will be accepted, pay to the Department a water-main construction charge in the amount of $50 for each consumer to be served.

2. In cases where water-main extensions are required to provide service facilities in new subdivisions, the applicant will be required to deposit with the Department the amount as estimated to be sufficient to cover the cost of making the necessary installation, including the distribution mains and fire hydrants complete.

On completion of the extension a determination of the actual cost thereof shall be made and any remaining portion of such deposit in excess of such cost shall be refunded to the applicant and the applicant shall be liable to the city for the deficiency in the event the deposit is insufficient. In addition the applicant shall be required to pay the cost of installing services to a point back of the curb for each parcel or lot in the subdivision which may be served from the proposed extension.

3. All extensions thus provided for, in accordance with these regulations, shall be and remain the property of the City of Riverside Water Department, and any balance of deposits remaining at the termination of any Water Main Extension Contract shall become the property of this Department.

Effective August 15, 1947, the following service installation charges, for water services to be installed within the incorporated limits of the city, will replace such established charges for the same and similar items heretofore in force and effect.

SERVICE INSTALLATION CHARGES

Service Size	*Improved Street*	*Unimproved Street*
¾"	$28.00	$20.00
1"	33.00	25.00
2"	70.00	60.00
over 2"	Cost	Cost

SUBDIVISIONS

Size	*Main to Curb*	*Curb to Property Line*
¾"	$15.00	$ 5.00
1"	19.00	6.00
2"	48.00	12.00
over 2"	Cost	Cost

Microfilming in Chatauqua County, N. Y.

IN Chatauqua, as in most counties, the problem of storing records which must at all times be available to the public had for decades been very serious, particularly in the office of Leslie A. Price, County Treasurer, where business has increased 70% with no additional space provided. This is the beautiful lake-bordered and lake-divided county to which thousands of people from all over America and from the farthest corners of the globe come annually to vacation, to participate in educational activities, to buy furniture or grapes, or to attend a convention.

Bulky volumes of tax rolls from each of 26 towns are filed here *every year*, as are countless stacks of receipt books containing copies of thousands of receipts issued by local collectors each year. Added to this are thousands of reports, deeds, receipts, and papers connected with the Treasurer's own office. The congestion cut down efficiency materially and bid fair to bulge the seams of the stately court house.

Recently the Treasurer secured a Recordak on a reasonable rental basis. Every check, receipt, warrant, and important document now is placed on the bed of this machine and a tiny photograph made. A 3¾-inch spool contains up to 6,000 images of these records and conserves vault storage. Should a fire destroy the book records, the entire system can be reproduced from this tiny film. A viewer permits screen enlargement, and a numbering system permits quick reference to unusual items. For ordinary findings the date runs along the edge of the film.

Seven years ago the county compiled at great effort and considerable expense an up-to-date card record of individual properties on which taxes were delinquent and involving titles to such real estate—4,045 parcels and 25,000 open-tax items. Two typists copied this record in a matter of 9 months. This made it unnecessary to refer to cumbersome record books dating 50 years back. Immediate handling of tax inquiries became possible. This record, however, was too bulky for vault storage. Microfilming solved the problem. In three days one clerk was able to place this entire record on 5 film rolls now stored in a bank vault.

Several years ago the Treasurer became concerned about the basic land map. It was 100 years old; there was only one official copy; and it was fading ominously. So the dimensions of each original lot were typed, reproduced, and filed in local offices. This record is now being microfilmed. This process is an increasingly valuable service to the public.

Punching in the Facts

At New London, Conn.

Discussing a series of cost reports—Commissioner of Finance F. N. Kelly and City Manager Edward Henkle. Mechanized accounting saves time and money.

NEW LONDON, Conn., has now had a year's experience with a mechanized accounting system carried through the major departments. It is a tabulating machine system which makes the tax roll, the tax bills, and the water bills; keeps track of all city-owned equipment and its running expenses; makes payroll, and writes pay checks.

Tax Accounting

A Master Assessors' Valuation File is maintained in the form of punched cards. This file includes all real and personal property recorded for each taxpayer. As changes of ownership, valuation, mailing addresses, exemptions, etc., come to the attention of the tax assessor, this file of tabulating cards is adjusted to reflect these changes. Therefore, at the end of the tax year when the abstract and tax roll must be prepared, the file of cards contains all of the information to be found in this record. The abstract or tax roll is then prepared automatically and mechanically at the rate of 60 lines per minute, and total valuations, etc., automatically accumulated.

When the tax rate has been established by the council, these cards are again used in automatic machines to compute the amount of the tax for each taxpayer, dividing the tax into two installments in accordance with the method of payment in New London. These same cards now prepare, automatically again, the actual tax bills and the tax collector's rate book.

As payments are received by the tax collector, the corresponding tabulating cards are removed from the file, used to tabulate the cash book, and placed in a "paid" file. The cards in the original file, therefore, represent unpaid accounts for tabulating delinquents.

Water Accounting

A master list of users' names and addresses is maintained in the form of tabulating cards. As each six-month period closes, this master file is automatically reproduced. Into these reproduced cards are punched the readings and the consumption from the meter readers' books. These cards are then placed in a multi-control reproducing punch which automatically applies the correct rate for each consumer. This same machine automatically punches into the cards the extension of rate times consumption to arrive at the money due from each account. These same cards are now used to mechanically prepare the water bills and the water-accounts book.

Since the individual users are coded as to residential, industrial, etc., reports are prepared for the State Public Utilities Commission on consumption by these classifications.

Payroll

Payrolls, checks, and all payroll records have been completely absorbed by the tabulating department. Complete payroll accounting is performed for all employees hourly rated as well as all salary workers. Through the use of job-assignment cards, each hourly-rated worker's time is accounted for each day.

Tabulating machines used in New London city offices. From left: sorter, multi-control reproducing punch, alphabetical key punch, alphabetical tabulator.

An accumulation of these cards for each worker represents the time for which each man must be paid. These cards are punched with all identifying information, automatically rated and extended, and used to prepare the weekly pay register and pay check.

In the case of salary workers, a master file is maintained for each employee. This file contains cards with all information necessary to complete all pay registers, pay checks, etc., for each employee each pay period. By a simple automatic operation, this file is reproduced each period to prepare all pay records for this group.

Cost Accounting

As an innovation in city administration, New London has found it possible now to get, through its tabulating equipment, complete and detailed cost accumulations on the operation of each department within the city. This system now provides the City Manager and department heads with the facts concerning the city's operation. These officials regularly receive reports on the cost of maintaining each public building, the cost of secretarial work in each of these buildings, etc. They know how much each street-repairing project costs, how much it costs to operate each piece of equipment owned by the city. They know when maintenance and repair costs on equipment and buildings exceed the normal or expected costs, and thus know when it would be more economical to replace that equipment or recommend a reconditioning.

This detailed cost control again comes with ease from the tabulating equipment. As mentioned previously, all labor is accurately charged to the proper manner through the use of material requisitions. These are later punched for sorting and accumulating with the labor cards by the tabulating equipment. A representative report produced automatically as a result of this application is the report of the Water Department to the State Public Utilities Commission.

The City Manager feels that he cannot over-emphasize the importance of this part of the tabulating system. The information which these cost reports provide enable the city officials to exercise judgment in making their decisions and to plan appropriations.

Budgetary Control

By punching cards representing all appropriations and commitments, it is now possible to tabulate a cumulative statement of the year's appropriation accounts—monthly or as frequently as desired. This statement provides accurate and up-to-the-minute information as to appropriations, expenditures, commitments and unencumbered balances.

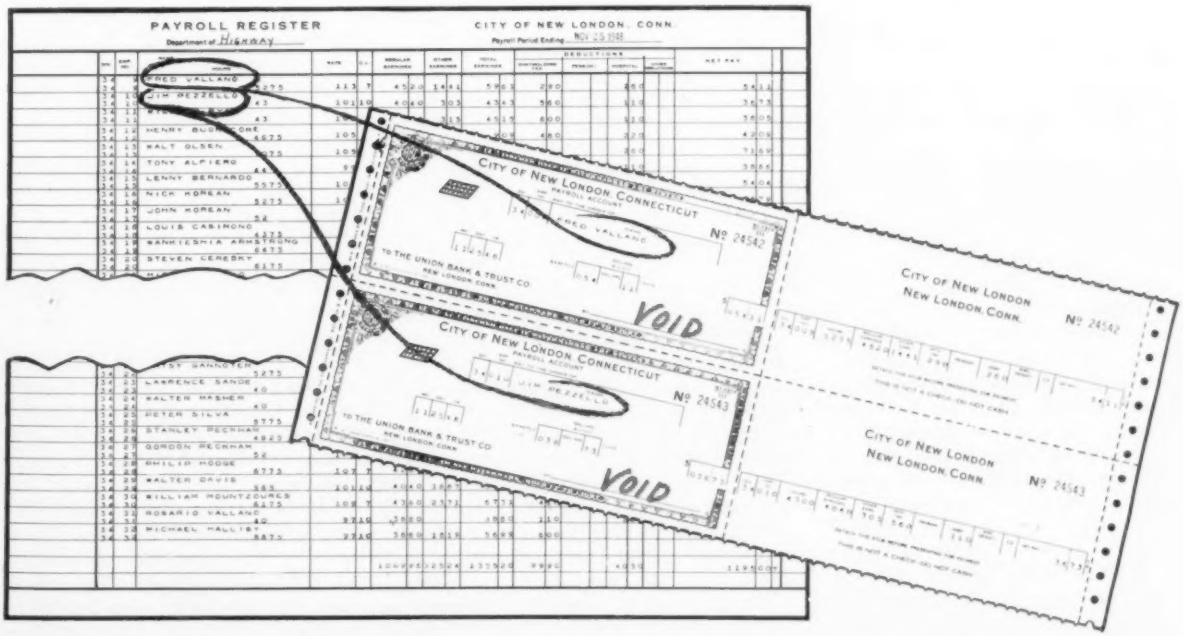
Advantages of this system are many. Speed and accuracy of course are of great importance and should not be discounted. However, Mr. Henkle, the City Manager, feels that the regular reporting of all departmental operating costs, along with the easy availability of any special report needed to "track down" any unusual condition that appears, are of primary importance. Just about any information the City Council wants can be supplied promptly without the need of having a department head drop everything else and work on books and records for days. These factors, along with the economies the system provides in the way of direct clerical savings, lead Mr. Hinkle and F. N. Kelly, Commissioner of Finance, to praise the system highly.

Savings in Size of Staff

Under the former manual system, six additional persons were employed for periods up to six weeks to help prepare the abstract and tax bills alone. This was in addition to a vast amount of overtime put in on this work by regular personnel. The preparation of water bills again involved employment of additional clerks and overtime on the part of regular personnel.

Under this new system, all of the extra clerks as well as the overtime of regular personnel are eliminated. This work is now done regularly with the tabulating equipment and two persons.

Credit for this modern system belongs to City Manager Edward Henkle and Commissioner of Finance Frank N. Kelly. The City Manager and the Commissioner, who is assistant treasurer of the Electric Boat Company, visited various cities and business-machine manufacturers in search of a good accounting system for their city of 30,000 population. They settled for Remington Rand Tabulating Machines, which were installed in the fall of 1947.



The tabulated payroll register and pay checks as employed by the City of New London. Similar work is performed under the new system of mechanized accounting for the tax abstract, tax bills, the water accounts book, and water bills.

MASSACHUSETTS — The Biggest Thing in Veterans' Housing Today

By HAROLD ROBINSON
Director, State Housing Board
Commonwealth of Massachusetts

THE REST of the country is waking up to the fact that Governor Bradford's $200,000,000 housing program is the biggest veterans' housing program in the country. Other states have initiated housing programs, but none on the scale and with the imagination of that of Massachusetts.

New Hampshire's $7,000,000 program was enacted over a year and a half ago, but as of September 1 ground had yet to be broken on a single project. Until August of this year, Connecticut had a mere $15,000,000 program of guarantees without subsidies, which means rents which are much higher than those of Massachusetts; in August, a special session of the legislature increased that program to $45,000,000, but still without subsidies.

California's program is largely one of temporary or emergency housing, and even its own legislative committee reported that its Veterans' Farm and Homestead Purchase Act has been of limited assistance to the average veteran. Illinois' expenditures have been for temporary housing or urban redevelopment. New Jersey has a more limited program. New York's program is larger, to be sure, in terms of money, but smaller in terms of speed and with limitations on the amount that may be contracted for each year, as compared with the Bradford program of immediate commitment.

In contrast, in two short months, following the legislature's making funds available for administration, an organization has been set up, personnel recruited, policies established, forms devised and information on the Massachusetts' program promulgated. Already there are over 100 housing authorities in the Commonwealth of Massachusetts, with earmarking requests totaling over $218,000,000, or some $18,000,000 more than the authorized $200,000,000. As of September 1, sites had been approved for some 27 projects, and approximately 4400 units totaling over $45,000,000 had been allocated. Construction is already under way in Boston, Cambridge, Pittsfield, Springfield, and Worcester.

A Two-fold Program

The program in Massachusetts is a two-fold one. On the one hand, under Chapter 200 of the Acts of 1948, it provides for the construction of rental housing by local housing authorities whose bonds are guaranteed by the Commonwealth and who receive from the Commonwealth an annual subsidy of 2½% of the cost of each project over 25 years. Preference in tenancy is given to the low-income veteran of World War II, with a secondary preference to low-income veterans of any other war. To supplement this program, the Commonwealth, through another act (Chapter 372), has also authorized cities and towns to borrow on their own credit and build projects (largely single-family houses) for rent for five years and sale thereafter. In this program, the state absorbs one-tenth of the cost by contributing 2% of the cost of construction each year for five years.

A Well-Balanced Housing Program

These two programs give to Massachusetts a well-balanced program. The 25-year rental program is a low-income veteran program of long-term rental. The rental-sale program, having a smaller subsidy and a shorter amortization period, means that the moderate-income veteran can also be housed.

The Chapter 200 program is in the hands of A. S. Bigelow, Chairman of the State Housing Board. He has, too, sole jurisdiction over other programs dealing with urban redevelopment, veterans' non-profit housing corporations, rental projects of insurance companies and savings banks, and supervision over federally aided low-rent housing projects. To help him administer these programs, Mr. Bigelow has appointed me and Osborne T. Boyd as Director and Deputy Director, respectively.

It has been no easy matter to set up an organization with limited funds and formulate and administer a program at the same time. Qualified personnel has been scarce and the inadequacy of state salaries has made the recruitment of good personnel doubly difficult. Nevertheless, personnel filled with zeal and enthusiasm has been recruited and limitations of staff offset by long hours and an almost religious fervor.

Responsibilities of Local Communities

The success of both programs depends upon complete cooperation between the local communities and the Chairman of the State Housing Board. In the case of Chapter 372, the city or town has almost complete autonomy. In the case of the Chapter 200 program, primary responsibility is on the local housing authority with the supervisory duty and the financial risk on the state. As in any case where one governmental body has the statutory duty of approving the action of another public body, or where one body assumes all the financial responsibility, there must be a certain amount of regulation. Because of the fact, too, that the number of housing authorities has mushroomed so in Massachusetts and because of their lack of experience, the Office of the Chairman has found it necessary to formulate and promulgate standards regarding the determination of need, income limitations, density and coverage criteria, environmental factors, site evaluation, cost limitations and types of construction. For this purpose, a "primer" of site selection and need standards has been issued, setting forth the many closely related factors to be considered.

To Secure Low-Rental Housing

In order to secure the greatest possible number of dwelling units at the lowest possible rentals, community facilities are eliminated and regarded as the responsibility of the community. To further reduce rentals, it has been necessary to insist upon substantial or complete tax exemption, economy of construction, and economy of operations. On the one hand the need is for speed, and on the other, the desire for community planning, considerations of environmental factors, and the utilization

of new kinds of material and new methods of construction.

The $200,000,000 program and the extension of state-aid for rental-sale housing emanated from the recommendations of two special recess commissions headed by State Senators Mason Sears and Philip Bowker, respectively. In December of 1947, the so-called Sears Commission made the following findings:

It has been conservatively estimated families of more than 50,000 Massachusetts' veterans are in desperate need of housing.

It is also estimated approximately 350,000 new residential units in this Commonwealth will be necessary during the next ten years.

Eighty per cent of the veterans in this state requiring housing are financially unable to purchase a home at present high costs of such dwellings. Their need—and it is this need the Commission desires to emphasize throughout the report—is for low-rental housing.

At the beginning of the 1948 session of the Massachusetts Legislature, Governor Bradford sent a special message to the legislature recommending the passage of legislation which would provide housing for the low-income veterans with state guarantees and state subsidies. The legislature, in an unprecedented move, unanimously translated those recommendations and the Governor's message into legislation by a vote of 219 to 0 in the lower house and 36 to 0 in the Senate. This, in itself, is evidence that the housing program in Massachusetts is a non-partisan program. The recruitment of staff and the administration of the program are equally non-partisan. Housing in Massachusetts is a necessity of life, not a political way of life.

It is not surprising to find in Massachusetts a Governor and a Massachusetts Legislature embarking upon such a forward-looking program. As early as 1911 the Massachusetts Legislature considered—and would have passed, except for an adverse court opinion—a bill to authorize the expenditure of state money for the construction of homes for mechanics, laborers, and small-wage earners. In 1915 and 1917, constitutional amendments were adopted authorizing the state and cities and towns to spend money for housing. In 1920, 20 houses were actually built with state funds. After that there was a hiatus until 1938, when a comprehensive housing authority law was adopted so that the communities of Massachusetts could take advantage of the United States Housing Act of 1937.

Reports from all over the country indicate that the eyes of the nation are upon Massachusetts' Governor Bradford and his housing program for veterans. The progress made to date by Mr. Bigelow and his staff indicates that the program will be a success and that the people of Massachusetts will once again have demonstrated that Yankee ingenuity, coupled with a willingness to see to it that every citizen has the necessities of life, can do what the Congress has thus far refused to do.

Planners Scarce in Australia

According to Leslie M. Perrott, architect of Melbourne, Australia, that country, like most other countries, is facing a severe shortage of skilled planners. The result is that both the Sydney and Melbourne Universities are moving to introduce a degree course in planning, while the technical schools are placing increasing importance on subjects allied with town planning. The photo shows a group of students working on a model for a planning project associated with a recent exhibition held by the Melbourne Technical School.

Can You Answer These?

Some Assessment Facts*

1. *Are assessment districts usually served by a single assessor or by a board of assessors?*

ANSWER: Single assessor. Approximately 25,800 districts are served by single assessors, while only an estimated 4,543 have boards of assessors.

2. *How many members does a board of assessors have?*

ANSWER: Generally, three. About 95% of the boards have three members. Others range from two to 27.

3. *What percentage of assessors are elected to office?*

ANSWER: About 90% of all county districts, 98% of township districts, 95% of all primary towns, villages and housing and redevelopment programs borough districts, and 30% of all city districts have elected assessors.

4. *What is the usual term of assessors?*

ANSWER: In 24,400 primary districts, 49% have two-year terms, 27.5% have four-year terms, and 18.3% have one-year terms, while only 3.9% have three-year terms.

5. *How are assessors removed from office?*

ANSWER: If they are elected, they are removable through recall procedure in 12 states. In other states they may be removed by the governor or the state tax agency. If appointed, they are generally subject to removal by the official or agency which made the appointment.

6. *How are assessors paid?*

ANSWER: By (a) annual salary, (b) per diem, and (c) commission. The vast majority of city and county assessors receive an annual salary. Township assessors generally receive a per diem. Only a few receive commissions.

7. *How many assessment review districts are there?*

ANSWER: There are 25 state review districts, 2,733 county assessment review districts, 10,978 township review districts, and 3,190 municipal review districts.

* From *The Assessors' News Letter* of the National Association of Assessing Officers, 1313 East 60th St., Chicago 37, Ill.

Charleston's

Hand-Operated Incinerator

A view of the stoking-room floor in Charleston's hand-operated incinerator.

Depression-built incinerator, designed for hand labor, achieves a 12-year operating record

By J. FRANK MORSE
Superintendent of the Incinerator
Charleston, S. C.

and

HARRISON P. EDDY, JR.
Metcalf & Eddy
Boston, Mass.

TODAY'S emphasis is on manpower-saving mechanization. The modern incinerator uses a crane to move the refuse, often uses mechanisms within the incinerator furnace to stoke it, and many times has mechanical ash-handling equipment. To keep a proper perspective on all phases of refuse disposal, it is useful to examine the operating record of a plant not so designed.

The Charleston incinerator was constructed as a day-labor work-relief project in 1934. Mechanical equipment for operation of the plant was reduced to a minimum as it was desired to provide for employment of labor insofar as economy permitted.

Last year the plant destroyed 186 tons of refuse per operating day. To do this it used 21 men on a single shift, thus producing an operating rate of 0.9 man-hours per ton, or roughly three times the amount that modern plants require. The skilled use of hand labor, judiciously balancing the type of refuse going into the furnace, has resulted in eliminating completely the need of supplemental fuel. The men operate the plant at a cost of $1.12 per ton of refuse burned.

Collection vehicles enter the plant on the top floor at the head of a ramp. They dump the refuse through a building-long opening onto the charging floor below, where sufficient storage volume is provided to permit regular charging of the furnaces throughout a prolonged working day. This storage space corresponds to the bin customarily provided in crane-operated plants, and by thus segregating operations permits the dumping floor and the surrounding premises to be kept clean at all times.

Falls Into Charging Containers

On the charging floor refuse is pushed manually through floor openings and falls into charging containers above the furnace arches. Electric charging mechanisms, push-button-controlled by the firemen on the furnace floor, open and

close charging gates at the bottom of the containers, thus permitting the refuse to drop by gravity into the furnaces. The furnaces are rectangular, hand-stoked units. Safety lights flash on when charging gates open, thus warning the men on the charging floor to keep away from the lighted holes. In addition, a bell rings and amber lights flash on in the furnace room when the charging containers have been filled, so there is no occasion for a fireman to open a gate until the container is ready to be discharged.

The residual ashes are dropped through dumping sections of the furnace grates into ash hoppers. There they are temporarily stored and quenched prior to their discharge by gravity through manually operated gates into motor trucks for ultimate disposal on ash dumps.

In 1941, after about seven years of successful operation, it was decided to enlarge the capacity of the plant by 50% to a daily design capacity of 300 tons or a one-shift capacity of 100 tons, adhering to all the original design features but increasing the storage volume about 100%. This enlargement was made necessary by the wartime growth of Charleston.

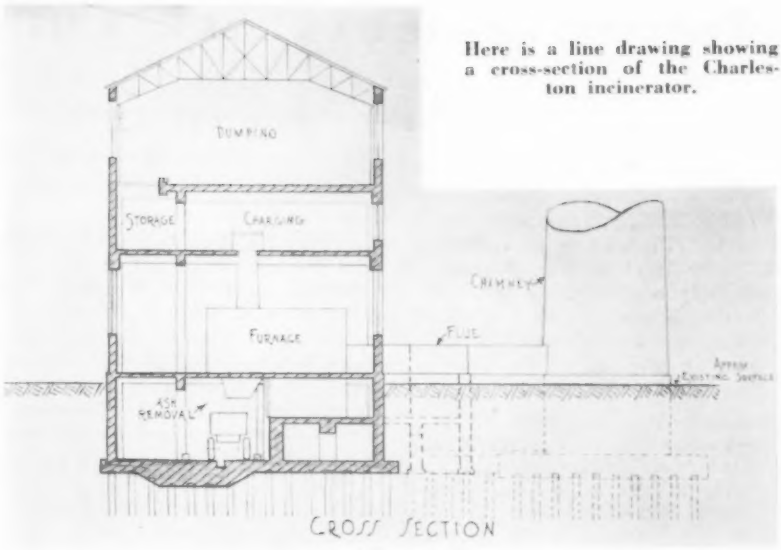
Cost of Operation

Operating costs prior to the war year 1943 were very consistently about 68 cents per ton of material burned. Since 1943, operating costs have risen with increased labor rates to a high point of $1.02 per ton for the calendar year 1947. The operating crew and present labor rates are tabulated below:

- Dumping floor—one man at 70 cents per hour.
- Charging floor—12 men at 64½ cents per hour, together with two foremen at 90 cents per hour (one of these foremen has charge of receiving the trucks on the dumping floor).
- Furnace floor—six stokers at 70 cents per hour, together with one utility man in charge of burning at 96 cents per hour.
- Ash tunnel—one man at 70 cents per hour.
- One truck operator for ash disposal at 79 cents per hour.
- There is one mechanic in charge of all mechanical equipment and maintenance at $1.15 per hour.

To an inquiry as to whether the men like their jobs, the answer is "yes." The department has a waiting list for work on all floors.

Last year 57,159 tons of refuse were burned at an average rate of 186 tons for each of the 308 working days. The plant is operated one shift daily. The residue from combustion amounts to between 7½ and 8%.



Here is a line drawing showing a cross-section of the Charleston incinerator.

Watermelons are extremely popular in Charleston, so the proportion of melon rinds in the refuse is extremely high during July and August. They are now separated on the charging floor and loaded by gravity into trucks belonging to hog farmers who haul them out to their farms.

No Supplemental Fuel

As occasionally happens when new refuse incinerators are placed in operation, a substantial volume of fuel oil was used in the early operation of this plant. It was soon found, however, that the experience gained in handling the fires, and the judicious use of the highly combustible portions of the refuse, permitted complete discontinuance of the use of oil. No fuel oil has been used in this plant in the last ten years, in spite of occasional very heavy rainfall. Shavings, box ends, and tires are excellent fuel. Formerly old storage battery boxes were used during wet weather, but it was found that when these were used in large quantities the gases resulting from their combustion were objectionable to the firemen.

After ten years' operation the fire brick of the furnaces, the combustion chambers, and the suspended-arch tile were renewed.

Construction of Chimney Lining Is Unique

The chimney lining of the original plant was built in thin sections supported by corbels on the interior of the radial-brick exterior shell, as a means of reducing the cost of construction in the depression days of 1934. It is the only incinerator chimney, of which the authors have knowledge, which has been built in this manner. The original sectional linings were also renewed after ten years' operation.

The electric charging mechanisms have given excellent service; no major repairs have been necessary during their twelve years of operation. Minor repairs have been made from time to time, including such work as repairing switches, replacing contact points, rewiring controls, and renewing keys in the drive shaft.

The air preheaters, which were designed especially for this plant, operate by mixing hot gases of combustion with fresh cool air. These heaters have functioned satisfactorily, and in the addition to the plant it was requested that the same type of air heater should be used.

Former and Present Disposal of the Ash

In the early years of operation, the dust deposited in the combustion chambers was sold to a local fertilizer-processing plant. Its fertilizer value was probably somewhat enhanced by a large amount of bones, small animals, and condemned seafood, which are disposed of in the combustion chambers. The fertilizer plant discontinued buying the ash several years ago, probably because its lack of uniformity made necessary an analysis of each batch to determine its value. This ash is now disposed of by dumping.

No Operation Nuisance

In spite of the location of the plant directly across the street from the railroad station, it has been operated without objection. This may in part be due to a rather pleasing architectural treatment which is in harmony with old Charleston, but it is largely due to the plant's skillful operation.

Improvements Are Coming to Rye

Fitted into comprehensive plan of development with participation of all civic groups

WHEN the taxpayers of the City of Rye, N. Y., by referendum June 8 authorized bond issues amounting to $1,545,000 for a six-year program of planned public improvements, they knew exactly what was what and how it got that way: they all had a hand in shaping the program.

The improvements include:

Off-street parking facilities in the business district	$ 500,000
A number of sewerage and drainage projects	950,000
Two new neighborhood playgrounds, increased development of the existing recreational center, and a small-boat facility	95,000
Total	$1,545,000

Rye's program is particularly significant because:

1) it was based upon a comprehensive plan for development rather than being an assortment of unrelated projects;
2) it was prepared and based on an intensive citizen-participation effort;
3) it included what is unquestionably one of the heaviest attacks to date on the automobile-parking problem in any U. S. community;
4) there was no campaign to "sell" the program and no organized effort to get out the votes.

This city of about 11,000 population, located on Long Island Sound some 25 miles from New York City, has had an official planning commission since 1922. An intensive city planning program has been operative since 1943—with some important achievements: a comprehensive city plan, revision of building and zoning ordinances to provide improved development in keeping with the plan, adoption of new improved subdivision regulations requiring all new developments to meet city standards, adoption of procedure for disposing of tax-foreclosed property only after retaining parcels needed to carry out the city plan.

Planning Seen Continuous

One of the main reasons why Rye's million-and-a-half-dollar public-improvements program is not just a collection of projects, and is not a piecemeal approach to municipal advancement, is that the city has for some years recognized that planning is a continuous process. This contrasts with the concept of city planning as the preparation of a plan to be put on the shelf for reference when needed and under which concept the plan is usually left to gather dust.

A yearly planning budget in Rye provides for advisory service of the best technicians on specific city problems as well as for a full-time city planning engineer. This makes for continuous work on planning and has enabled the city to produce a basic, practical comprehensive plan by which growth and development can be wisely guided and directed and which can constantly be kept up to date.

Rye's comprehensive plan, prepared in 1943-46, led to City Council presentation, for taxpayer approval in the fall of 1946, of a $600,000 program for improvement of the city's business district, principally for off-street parking-area development. This failed to win approval chiefly because of lack of complete public understanding of the plan.

Citizens in the Know

Sparked by new leadership in the person of Frederick P. Clark, who became chairman in 1947, the Rye City Planning Commission started from scratch again to work out a new program for approval of the City Council and the taxpayers.

A professional city planner and planning director of the Regional Plan Association, Inc., New York City, Mr. Clark was persuaded by the then Mayor, Grenville S. Sewall, to accept the City Planning Commission chairmanship, serving as a citizen without compensation.

Mr. Clark not only holds one of the most important non-official technical planning positions in the country, but he has wide experience in the field of local planning both as a citizen and as a planner. This experience—and particularly his work of recent years in assisting many local official and non-official planning agencies in the New York Metropolitan Region, has convinced Mr. Clark of the practicality and the wisdom of citizen participation *from the beginning* where planning of communities is concerned.

At the outset, therefore, the reinvigorated Commission asked all active civic organizations in the City of Rye to appoint cooperating committees to meet with the Commission. They were urged to come right out with their thoughts on what should be included in a public-improvements program and what should be undertaken first. There were 16 groups officially cooperating at the start; several more groups later showed interest and were asked to participate. They ranged from the Taxpayers Association and Board of Trade to service clubs, veterans' organizations, women's clubs and neighborhood organizations. A wide cross-section of the population thus played an active part in framing the program.

The City Planning Commission considered the assistance of these groups invaluable to the preparation of the program. From early in the summer of 1947 through the winter and spring of 1948, the groups met with the Commission, usually two at a time. Complete stenotype records were kept of all meetings, so that the Commission could give careful study to all viewpoints. Everybody had an opportunity to speak his mind as the Commission listened in an effort to obtain ideas from all sides.

The Mayor and city fathers were kept constantly posted on what occurred at the successive joint meetings as they took place, so they were fully informed when it came time to consider recommendations. The group meetings with the Commission were conducted off the record as far as the press was concerned, to encourage complete freedom of expression. This was done through agreement with the editors, who were, however, kept informed of progress.

After the joint meetings the Commission, with its technical staff working out details, proceeded to prepare a tentative program incorporating all important and generally favored suggestions of the various groups. This tentative report was printed in detail by the press and further comments and suggestions were asked from the public at large. The schedule was then reviewed by all the groups and revised before submission to the City Council as a recommended program.

Late in April the City Planning Commission had published and distributed by mail to all taxpayers a 12-page printed "Report on a Recommended Program of Needed Public Improvements." A brief, simple document, the report came out with clear-cut facts about the growth and development of Rye, a general description of the program, financial considerations, and the recommended 17-point program with a specific description of each project.

Overwhelming support at the Council's public hearing was followed by unanimous Council approval and subsequent approval by the taxpayers in a

(*Continued on page* 167)

The City Tells Its Story

By HENRY DAVIS NADIG, *Director of Public Relations, New York Regional Plan Association*

Rye provides example of how active citizen interest can get results

HOW the City Planning Commission of Rye, N. Y., and nearly a score of civic organizations together achieved adoption of the most important program of public improvements in the city's history (see opposite page) is one of the most notable examples I have yet become aware of in the field of municipal public relations as carried out by an official planning agency.

You must have both energetic, well-qualified leadership and interested, active, intelligent citizenry to make real municipal progress in community planning. Rye measures up well to both these requirements—and that accounts for the success story of Rye's new six-year planned public-improvements program.

Many are the pearls of planning that have been cast before the swine of public apathy. Many are the master plans gathering dust for want of either MPR know-how or citizen interest.

What licked the much-touted 1946 Rye program, in my opinion, was the fact it was presented without letting the people share in its formation.

As unpaid citizen chairman of the Rye City Planning Commission, Fred Clark at once went into close working relationship with both his fellow commissioners and the Mayor and City Council. This relationship extended to all municipal departments. Recognizing they had an expert among them, they liked his unofficious manner of stating fact and experience, of asking logical questions, of drawing apt analogies to illustrate a point, of listening to all angles. A mutual cooperation began which has carried over into the new administration of Mayor Karl T. Frederick.

The Planning Commission started with the people's ideas as to which aspects of the comprehensive city plan should be carried out first and which should be acted on now. These proposals had to stand the test of many joint sessions of most of the city's civic organizations with the Commission.

These joint meetings, this asking and listening to civic and neighborhood groups was something new in Rye planning procedure. The people were having their say—right from the start.

By putting the people in the know and having them share in deciding what should be done, in what order and how; by taking the press into confidence; by coordination among official departments; by utilization of its regular paid technical city planning staff; by sound leadership notable for the absence of any high-pressure selling methods; by publication of a simple but soundly documented report and recommended program—by these practical public relations procedures, Rye achieved success in safely guiding development of its greatly needed public improvements.

Houston's Active Annual

Fast-growing Houston, Texas, claims to have been receiving more attention in the nation's press during recent months than any other U. S. city.

Perusal of Houston's 20-page newsprint tabloid "Anniversary Report," de-

Anniversary Report

FIRST ANNUAL REPORT ON MAYOR-COUNCIL GOVERNMENT, AUGUST 1, 1948

ONE OF MANY improvements made during the past 18 months is the completed stretch of new Fannin Street paving shown at the right, center.

Running from Holcombe Boulevard north to Harris Gully, it will be tied in by another section, from Harris Gully to Hermann Drive, to provide an artery to serve the Texas Medical Center, new buildings of which are shown at right. Behind the Medical Center buildings is Hermann Hospital.

The new Fannin Street opening will also provide a duplicate artery for traffic from downtown Houston to the Reliance and Main area, lightening the heavy load on South Main.

This airplane photograph, looking north toward the city, also shows the stretch of Main Street, from Eagle to the Sunken Garden, where a giant storm sewer was recently installed in record time to drain the noted "lake" in the vicinity of Main and Eagle. The sewer goes south from the Sunken Garden, in the new Fannin Street right-of-way to Harris Gully. It was laid in this section ahead of the paving of Fannin, so that the new Fannin Street paving will not have to be torn up to install the sewer.

The section of Main from Eagle to the Sunken Garden will soon be repaved. It will cost $250,000.

Know Your Councilmen

YOU MAY be on a radio quiz program sometime, and you may have an opportunity at the jackpot simply by knowing the names of your councilmen and the districts which they represent.

Mayor Oscar Holcombe presides over the council meetings. Phil Hamburger, W. A. Kirkland and J. S. Griffith are councilmen-at-large. District councilmen are Tom Needham, No. 1; Edwin D. Bailey, No. 2; Harry Holmes, Jr., No. 3; Tom H. Crawford, No. 4, and Clyde Fitzgerald, No. 5.

Three of the councilmen are termed "councilmen-at-large" because they are elected by votes of the people over the entire city. Five of the councilmen are known as "district councilmen" because they represent particular districts and are elected by the votes of those districts.

TABLOID COPIES AVAILABLE

If you failed to get a copy of this tabloid magazine and if you want one, you may obtain a copy by calling at the mayor's office on the third floor at the City Hall.

A few additional copies have been printed. They will be given free to the Houstonians who call for them as long as the supply lasts. When the supply is exhausted, no more copies will be available.

For this reason, it is suggested that you save your copy. As a source of information and for future reference on the activities of your government, it will be useful.

A Letter From Mayor to Citizens

This report to the people of Houston on the accomplishments of your city administration during the past 18 months has special significance.

First, it is significant for its portrayal of the vast work program which has been accomplished during the comparatively brief period since January 2, 1947, when you placed us in office.

Second, it is significant in the manner of its presentation. That of a tabloid newspaper containing readable, interesting, factual information.

Third, it is significant because this report comes to you on Sunday, August 1, the first anniversary (almost to the day) of the adoption of a series of charter amendments by the voters which abolished the city manager type of government and instituted the mayor-council form of government.

This report was compiled from facts and figures submitted by department heads covering the activities and the work program of their departments for 1947 and for the first half of this year. In many places, comparisons are given with the work of 1946—last year of the city manager ship. You shall be the judge as to the respective accomplishments.

We are proud of our record. We have had to overcome obstacles, many of which we inherited. We accepted the responsibility of restoring your government, of putting your house in order. We have done much in this direction. Much remains to be done.

We hope that you will be pleased with this report. Reading it, we believe, will give you a better insight into the workings of your government and a keener appreciation of the accomplishments of the past 18 months.

In closing, I wish to express my appreciation to all the department heads and to the employes for their co-operation. They made this report possible. The work is theirs.

Sincerely,

Oscar Holcombe

Mayor.

tailed but action-packed, shows you precisely what has been going on down there in the past year and a half. This is something—many things—that has brought acclaim to a city which the *Saturday Evening Post* says is "an incipient heavyweight champion — awesome and unstoppable."

The *Post* quote is from only one of 17 national magazine or newspaper references reprinted on page 4 of the prodigious Houston annual report — the city's first in tabloid form. Prodigious, yes. But don't get the idea the report is heavy or cumbersome. Far from it!

There as 95 news stories in the tabloid and 38 pictures, including two cuts comprising montages of newspaper clippings; a one-page, six-photo, picture story, and another photo-montage page. It appeared to me that approximately two-thirds of the report was text and only one-third pictures. This proved to be about so when, for the fun of it, I measured 'er up and found that the pica column count of text including heads and pictures (excluding cutlines) was 6,329 and 3,071, respectively.

With this two-to-one ratio of text to pictures, you might think weight of text would overpower the reader. Interest and readability through news-story technique are the effective antidote: sentences generally are short; paragraphing is frequent; heads vary in the makeup. Result: facts and figures can be digested easily by the average reader.

This first annual report on mayor-council government in Houston (the city-manager form went out at the end of 1946), is dominated on page one by a five-column aerial picture showing one of the street-paving accomplishments of Mayor Oscar Holcombe's present administration and a three-column-wide letter from the Mayor to the citizens stressing the significance of the report on the Administration's 18 months' accomplishments

Obviously a good annual report not only should dramatize for citizens the municipal achievements of the period covered — it also should provide inspiration for renewed active citizen interest in further municipal progress. Likewise, it should enhance official *esprit de corps* and promote increasing community consciousness among the public.

The Houston report does the first in a clear and practical manner. The people of Houston themselves, by their actions, will demonstrate to what degree the other objectives are achieved.

Plain Talk by Radio

You can add Providence, R. I., to the growing number of alert cities whose chief executives are bringing their city's story to the people by radio.

For some time now, Mayor Dennis J. Roberts has been reporting to the people of his city in a series of 15-minute Wednesday evening broadcasts, with the time being allotted by a local radio station as a public service.

It is interesting to note, as I look over scripts of some of these broadcasts by Mayor Roberts, that he talks by radio *with* the citizens of Providence, not *to* them or, least of all, *at* them.

Here is *plain talk* with the people—in their language. Here is talk that is not above occasionally taking a minute to make a technicality understandable or to bring a professional term down to earth.

As an example, when the professional planners are talking about "blight," the public generally doesn't recognize exactly what they mean—although the planners may not realize it.

But when Mayor Roberts of Providence was giving a radio talk to his fellow-citizens on the subject of Community Redevelopment, he took a minute to *show* what blight is by describing it simply and then said to his listeners (whom he wisely addresses by the second personal pronoun):

"The professional name for this process is *blight*."

You probably don't doubt, either, that there was more than one radio listener who sat back in his chair and said something like:

"Well, that's the first time I knew exactly what those fellows meant when they talked about *blight*. You got to hand it to Roberts for making things plain."

The people of *your* city want to know more about *their* city. And they want to get the facts in words they can understand the meaning of *quickly*.

Good, plain, honest talk with the people is good MPR — by whatever means it reaches them.

Mayor Roberts and Providence will reap valuable dividends from his informative radio talks with the people.

Film Library

City Plan Engineer Charles E. Downe of New Haven, Conn., tells me that he is starting a film library with the purpose of covering the story of the city of New Haven—its history and its future.

Charlie has had the idea for quite a while. But a few weeks ago he went up in a blimp and took a series of movies of the Elm City. These brought his film library into actual fact.

Aside from the library and education angle—the movies will be shown as shorts to citizen groups to help educate the public on development of the city plan—Charlie Downe thinks an aerial approach to some of his own planning problems may give him some helpful angles.

He wants to work up movies of areas of the city as they are now and follow through as various phases of the capital-improvement program are developed.

Charlie also sees an opportunity here for citizen cooperation on the part of persons skilled in taking movies, either professionally or as a hobby. They can share in civic affairs by helping to build up the New Haven Municipal Film Library with pictures of their own taking.

Few, if any, cities have really tapped this fertile field to its fullest extent. Yet think of the opportunity here for creating a municipal film library through active citizen interest in taking movies of city significance and making this their contribution to the city.

Planning Recommendations Judged At San Fernando Valley Exhibit

SEWERS, additional police protection, street lighting, increased transportation and more schools were judged to be the most important items for consideration in planning the future of the San Fernando Valley, at a recent week-long city planning exhibit sponsored jointly by the Los Angeles City Planning Commission and the North Hollywood Chamber of Commerce. For answering the question, "What is most important in planning the future of the Valley," four of its residents received several hundred dollars in merchandise orders.

Judges included Charles B. Bennett, Los Angeles City Planning Director; James W. Reitz, North Hollywood attorney; Frank H. Reynolds, manager, Bank of America, North Hollywood; Berniece Harris, postmaster, North Hollywood, and Frank M. Barton, president of the North Hollywood Realty Board.

In congratulating the winners, Mr. Bennett said, "No city can be properly planned without the full participation of its people. Interest and ideas such as those submitted in this contest are an indication as well as a guarantee to the people themselves that the planning of the San Fernando Valley will be a 'people's plan,' and not something which is the result of the determination of a handful of persons in the City Hall."

The exhibit, which includes models and drawings, will be displayed in various sections of the city within the next few months.

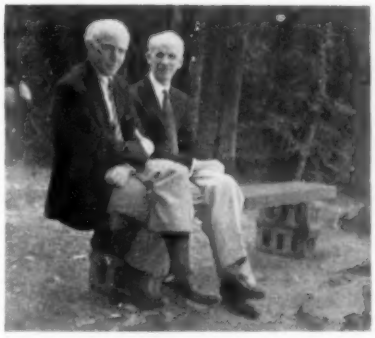
Some Municipal Problems of 1912

As recorded by the late Charles A. Beard

IN THE death of Charles A. Beard, the nation and the world have lost not only a famous historian, but also a civic leader who, in his earlier years, was a vital force for the improvement of municipal administration.

As Professor of Politics in Columbia University and later as Director of the Training School for Public Service of the New York Bureau of Municipal Research, Dr. Beard's teachings and writings and researches pointed the way and helped to clear the path for many a reform in the framework and practice of local government.

In 1912 Dr. Beard wrote, and The Century Co. published, a textbook entitled "American City Government: A Survey of Newer Tendencies." As a reminder of some conditions existing 36 years ago, and as prophetic of progress since made, the following excerpts, it is believed, will be of special interest to readers of THE AMERICAN CITY:



Charles A. Beard (left) and the Editor of *The American City* at the Stevens Institute Camp (1935).

ELECTRICITY GAINING ON GAS AND OIL

The streets must not only be properly constructed and thoroughly cleaned, they must also be well lighted at night. The primitive element in street lighting was the provision of enough illumination to enable the pedestrian to pick his way from one place to another after nightfall. Some of our cities have scarcely got beyond this primitive stage, but new elements are winning recognition. Well-lighted streets and alleys tend to diminish crime and reduce the burden of police protection; they increase the value of the adjoining property; they prove profitable to businessmen by attracting trade; they are a general incentive to "civic pride"; and they are an encouragement to cleanliness.

As to the method employed in lighting streets, gas has steadily supplanted oil and other fluid lamps, and electricity is constantly gaining on gas. Indeed, gas is now seldom employed in the installation of new systems; it is rather being continued where already installed, on account of the contracts with private supply companies or the expense attached to the construction of new plants.

FIRE HORSES BEING SUPPLANTED

As is in keeping with the advance of the country in mechanical inventions, the machines for fire fighting are being steadily improved. Collapsible ladders which can be raised to a great height are being introduced in cities having tall buildings. The motor fire engine is supplanting the fire horses; and on account of the terrific speed which can be developed by high-powered automobiles, the time consumed by a brigade in reaching a fire is incredibly shortened.

ANTIQUATED GARBAGE COLLECTION

Whether the garbage is separated from the ashes or not, the present antiquated methods of cartage commonly employed in the United States must be supplanted by the use of the new type of covered, dustless, and odorless carts. The lifting of the heavy ash cans up to high wagons is a physical strain on the men which soon tells on them. The breathing of the dust which blows from the wastes seriously affects their lungs, as statistics of street-cleaners show. Moreover, the collection should be made with such precision that the cans need not be standing on the streets all hours of the day and night, and private citizens should be compelled to take in the emptied receptacles speedily on pain of fine for repeated offenses.

NEED FOR SEWAGE TREATMENT

The relation of water to public health, of course, makes the treatment and disposal of sewage a matter of first-rate importance. Where the city is, like Chicago or New York, on a great lake, or river, or the ocean, the process of disposal by discharge into public waters has been the accepted practice; but of recent years there has been no little uneasiness on account of the degree to which sewage saturation extends, and on account of the danger arising from the use of such waters for drinking and bathing and the possibilities of polluting oysterbeds.

WATER METERS ADVOCATED

In the regulation of the charges made by water companies, several elements must be taken into account. For reasons of health, it is absolutely imperative that a copious supply should be furnished at a low rate, and while it is a growing practice now to fix the charges according to meter measurement, a great deal may be said for the older policy of making flat rates according to the number of sanitary conveniences rather than the exact amount of water consumed. The use of the meter, however, tends to check unnecessary waste; and, if a sufficiently low rate is fixed, the demand for economy is met and at the same time health and cleanliness need not be sacrificed.

MUNICIPAL HOME RULE

It is clear that in practice the boundary line between legitimate state intervention in municipal affairs is difficult to draw; and that shrewd legislatures, if supported by judicial sanction, may pass a great deal of special legislation under the guise of general acts, in spite of home-rule charters. Nevertheless, it is a decided gain to have written in the fundamental law of the state a provision authorizing cities to draft their own charters and to exercise general powers. It is even a gain to forbid the legislature to pass special city laws fixing wages or salaries of city employees, creating or abolishing city offices, prescribing duties for them, or exempting any person, in part or in whole, from any assessment or tax levied by the municipalities. If these forms of special legislation were excluded, our cities would be at least partially relieved from the irritating charter-tinkering and "ripper" legislation which contributes so much to the chaos existing in American municipal affairs.

GROWING INTEREST IN CITY PLANNING

City planning is a new municipal interest in the United States. On the call of the New York City committee on congestion, the first National Conference on City Planning and the Problems of Congestion was held at Washington, D. C., in May 1909. . . . In our leading cities local associations are vying with each other in securing experts to prepare handsome and impressive volumes showing imposing buildings, grand avenues, and splendid plazas—volumes which are often followed by no practical results and which, after a little furor, are allowed to repose peacefully among the municipal archives. . . . The careless and superficial way in which the phrase "city planning" has been bandied about, and the evident futility of many expensive surveys, have led serious workers in the field of municipal improvement to sneer at the idea and treat it as outside the range of practical affairs. . . . The attacks upon city planning have been useful, however, for recently experts in the subject have begun to see the incongruity and immorality of calling a city of festering slums and fire-trap factories "beautiful" simply because the places which "respectable people" see—the parks and public buildings—are ornamental.

An analysis showing how proper design and correct financing fit the sewerage program

The Economics of Small Sewage Works

By CLINTON L. BOGERT
Bogert-Childs and Associates
New York City

IF a farm has poor sewage facilities, the neighbors are rarely plagued by the nuisance. Cesspools, or septic tanks with tile or clay pipe fields, serve usefully on farms and in sparsely settled suburban developments where there is a porous subsoil, and where large building plots provide adequate spacing between dwellings.

The real problem develops with a population increase in a suburban area. This frequently results in a subdivision of the farm into city-size building lots, in overflowing cesspools, inadequate drainage facilities, neighborhood nuisances, and a health menace.

It is a common problem throughout the country. Bergen County, N. J., with its large commuter population, is a good example. This county is composed of 70 separate municipalities, and just about 50% of them are without public sewers primarily because the preponderance of farm land left between the centers of population makes a sewage system exceedingly expensive, if not altogether uneconomical.

The necessity of sewers becomes apparent with the transition of a region's characteristics from rural to urban. Quick and efficient removal of domestic and industrial wastes is obviously a most important public health measure in a built-up neighborhood. Underground conduits of vitrified clay pipes have met best the requirements of safe, convenient, and quick removal of community wastes. Since a large portion of the municipal sewage consists of liquids, the volume of flow afforded will easily transport the small proportion of the solids found in all sewage. When the community grows to be an industrial town, and chemicals and other industrial wastes are discharged to the sewers, vitrified pipe will be found the most durable pipe material.

Problems of Cost

Long-range economies often have to be disregarded in the initial stages of a sewage-works project. The engineer frequently can keep first costs low by various temporary subterfuges which generally involve higher operating costs.

The West Long Beach Sewer District on Long Island, N. Y., is long, narrow, and very flat, so that the required slope for a trunk sewer would have resulted in a great depth at the treatment plant. It was possible to keep the first cost low by installing three pumping stations at the one-third and two-thirds points of the length of the district, and at the treatment plant. Operating costs, of course, are higher, since one-third of the sewage is pumped three times, one-third is pumped twice, and one-third is pumped once, but initial financing costs were much lower.

First costs of sewage systems may be reduced materially by substituting a pumping station and force main for a deep tunnel through a ridge. This is true, particularly, where the contributing population to the pumping station is problematical. But in later years, the power costs will make it economically feasible to replace the pumping station with a gravity sewer, generally in a tunnel. For instance, in 1924 Teaneck, N. J., installed in a local assessment district a pumping station and force main at a cost of $89,000 to provide outlet facilities for about 200 houses. The pumping station was outgrown in 1937, and larger pumps were installed at township expense. Ten years later, with 1,000 houses, the operating-power bills had become so burdensome that the township had plans prepared for a $350,000 tunnel. If a tunnel had been proposed in 1922, the project would have been defeated, but in 1947, a sound basis for a tunnel could be presented to a prosperous fast-growing community.

Providing for the Future

In the interest of minimizing first costs, structures may be proportioned for the shortest practicable period (which is generally prescribed by the requirements of the State Department of Health), generally 25 years for sewers and force mains, and 10 years for

Costly construction and careful engineering are often needed in rural service.

pumping stations and treatment plants. Population forecasts are at best a guess, especially around great cities.

The several ways of meeting the financial problem can be best presented from actual cases, cited below, which were handled by our firm:

1. Local assessment districts, set apart from the farmlands, have proved successful. In 1920 Teaneck, N. J., had an area of about 4,000 acres and a population of 4,000. Two built-up centers separated by 6,000 feet of intervening farmland, and lying on opposite slopes of a ridge 80 feet high, had outgrown their cesspools. Local assessment districts were set up for each center, and two separate sewer systems (east and west) were built, each with its primary-treatment plant. These two assessment districts each contained about 150 acres, a small part of the Township. By 1925, this fast-growing township had a population of 10,300 scattered over three centers, and it was necessary to set up another assessment district in the north end of the township and to build another treatment plant and separate sewer system.

More Sewerage Needed

At about the same time, by reason of the rapid influx of the commuters, it was necessary to extend greatly the earlier local assessment districts and to build new and larger treatment plants in each district. The new improvements were assessed only against the additional territory in each district. By 1928, when the population had become 14,000, the three local assessment districts had become so expanded as to join each other and cover all the habitable lands in Teaneck. Improvements made in 1937 substituted a pumping station for one of the 1922 treatment plants. By that time, most of the assessments had been paid, the population had increased to 22,000, the entire township was sewered, and it was decided that the township as a whole should stand the cost of further improvements of the treatment plants.

In 1922 it appeared inexpedient to construct even these separate systems at township expense. It is often the case that two centers, such as those developed in Teaneck, are built up by newcomers who have not yet attained community spirit, while the intervening and preponderant farmlands of the township are occupied by old settlers who generally resist urban improvements and contrive to set up legal and physical barriers to municipal services.

2. The Village of Ridgefield Park, N. J., has a ridge on its north and south center line. In 1920, the population was 8,600, but the built-up area of the municipality was only 1,000 acres. Hence, the ratio of valuations of farmlands to

In residential areas, pumping stations can be harmonized with neighborhoods.

hamlet was much lower than in Teaneck, and it was decided to build, as a village project and subject to a general bond issue, a treatment plant on each watershed, and a sewer system to each plant. The 1947 population of the village is 13,000 and the State Department of Health has warned the village to improve both plants.

3. Similarly, near-by Leonia, N. J., found itself with a population of 3,000 on 800 acres; but it lies entirely on one drainage slope. However, the centers of population were in different degrees of development and over a mile apart. It was deemed expedient to build the southerly system and treatment plant in 1914 as an obligation of the whole borough. The northerly system and treatment plant were not installed in 1924; this project was also assessed against the whole borough.

4. In Darien, Conn., which is a large town containing 7,400 acres with three or four hamlets separated by large estates and farmlands and drained by separate streams, each too small to tolerate a sewage-treatment plant, a project was made economically feasible by setting up a sewer district whose limits followed property lines near the hamlets. All properties within the district fronting on a sewer were assessed for costs of construction in proportion, not to the length of frontage benefited, but to the valuation of the property relative to the total valuation of the sewer district. Operating expenses are assessed annually against only the houses connected to the sewer.

5. In the town of Orangetown, N. Y., containing 16,000 acres, a hamlet of 1,000 people and about 600 acres in the southern end of the town, developed cesspool nuisance, and a sewer district was formed in the trouble area and administered by the Town Board. Operating and financing costs are assessed against all the properties of the whole district at 60 cents per $100 of valuation for properties which can use a sewer, and 20 cents for properties not yet sewered. These figures mean little except in the relative costs to users and non-users since a large industry pays about 90% of the operating costs.

6. The State of New Jersey has recently put on the statute books authorization for constructing and operating sewage facilities under a Sewer Utility Plan, wherein the project is rendered self-liquidating by collecting annual sewer revenues from the benefited property. The Citizens Committee of the Borough of High Bridge, N. J., issued a brochure in 1947 for a referendum setting forth the manner in which the Plan would be applied to that municipality.

Summary

It is practically axiomatic that cesspools and similar devices will not definitely satisfy the sewage-disposal needs of rural communities, particularly when a public water supply is available. The chief obstacles to providing sewage facilities are financial and legal. These obstacles in many instances can be overcome by setting up the project on a self-liquidating basis through sewer rentals, which allocate the costs according to the benefits. Some states have legislation which encourages this method of financing by exempting the utility bonds from the restrictions on the general indebtedness of the municipality.

In the final analysis, however, the answer to the question as to whether or not sewers will be installed is not found in the engineering aspects nor the legal and financial restrictions of such, but in the urgency developed in the community for a service whose primary function is the protection of health, by whatever means it can be financed.

Baltimore, Md., Reclaims Its Streets

Old street-car tracks were covered rather than removed.

Sheet-asphalt and bituminous-concrete surfacing over old pavement adds years of smooth riding

THE street situation was strictly "rough" in Baltimore back in 1946 and was getting no better fast. From the impersonal topographic standpoint it was rough, jagged, and full of potholes. From the point of view of motorists, it was rough, slow, and car-shaking. And from the viewpoint of the Baltimore Bureau of Highways the problem was not one bit easier to handle. It was a mean situation that required careful engineering to satisfy good construction and an annoyed public disposition.

Here is a Galion variable-weight roller compacting sheet-asphalt surfacing freshly laid by a Barber-Greene paver.

The rugged appearance of streets was the unwelcome offspring of harsh economy and a wartime program of "deferred maintenance." The streets were originally of good quality. Some were brick surfaced, some sheet asphalt, some built of portland cement concrete. They had served for 15 to 25 years, holding up commendably in the face of heavier traffic and bigger loads than the original designs had contemplated. But when the war clipped the wings of a maintenance program, these streets, nearing the end of their normal useful life anyway, went from bad to worse in a hurry.

The man who had to meet this situation was Highway Engineer James H. McKay, head of the Baltimore Bureau of Highways. He had two choices Either he must tear the pavement up and start over, at best an expensive proposition, or he must conceive of some way to add new years of life to the old, broken-down streets.

Of course, Baltimore's situation was not novel. Street departments in many cities around the country found themselves in exactly this same condition when they began to piece together what was left after the telling neglect caused by the war. So Highway Engineer McKay did what any other good engineer would have done. He found out how other cities handled this situation and what results they had obtained, before starting his own program.

Detroit and St. Louis especially interested him. Here were two major cities whose streets had suffered as had Baltimore's. Both were doing fine jobs of rehabilitation by using sheet asphalt over the existing paving. Both were getting good results. After making first-hand examinations of the results and procedures, Engineer McKay decided to pattern his program somewhat along the lines of those followed by Detroit. If he could resurface the existing paving and get 8 to 10 more good years of service out of them, he would be able to provide a high-grade surface at an encouragingly low cost.

Car Tracks Require Covering

Certain local problems presented themselves that demanded careful consideration. Many Baltimore streets have abandoned street-car tracks, made obsolete by the newer buses and trackless trolleys. The question was whether to tear out the rails or to cover them over. Engineer McKay decided to cover them. The buried rails did present a potential threat since eventually the ties might rot away and make settlement possible in the streets. However, he felt that they could be removed better at some time in the future when the entire street would have to be resurfaced. Today the rails are being carpeted over carefully by about two inches of sheet asphalt or bituminous concrete.

The choice between bituminous concrete and sheet asphalt was another decision that required some study. It was decided to use both. Much of the street system is surfaced with a bitumi-

nous surface similar to bituminous concrete. In an effort to keep the surfacing consistent, the coarser-graded bituminous concrete is used here. However, about two-thirds of the new street work is sheet asphalt. By seeing how the two perform, the Bureau of Highways expects to gain pointers on how the rest of the work should be set up.

The less expensive bituminous-concrete surfacing uses an asphalt with a penetration between 85 and 100. The aggregate used conforms to the following sieve analysis:

Screen Size		*Percent*
Passing	¾" sq. sieve	100
"	½" " "	90-100
"	⅜" " "	68-85
"	#4 sieve	50-70
"	#10 "	35-55
"	#20 "	23-40
"	#40 "	15-30
"	#80 "	8-20
"	#200 "	2-10

The mix contains an asphalt content of 5 to 8%.

On the bituminous concrete there is applied a light seal coat with a composition as shown below:

Screen Size		*Percent*
Passing	#4 sieve	100
"	#8 "	60-90
"	#50 "	0-50
Asphalt Cement		4-6

In placing this bituminous concrete, the same practice is followed regardless of whether the existing surfacing is brick, sheet asphalt, or concrete.

The first step is to clean thoroughly the present surface, removing any damaged material that may have formed pot-holes. On streets where abandoned rails are covered, the area adjacent to and over the rails is given a tack coat of AE-4 asphalt emulsion, either painted or sprayed in place. After the emulsion has "broken," bituminous concrete is placed over the rails and packed carefully into the annular area that receives the rim of the wheel. This concrete is then compacted by rolling with a 10-ton roller.

The next step is to apply a tack coat of AE-4 asphalt emulsion sprayed at the rate of .05 to .10 gallons per square yard. No more is applied than can be covered with asphaltic concrete in the same working day.

Following this, a leveling course is applied that takes the bumpiness out of the old surfacing. This is applied by a Barber-Greene spreader to a maximum depth of 2 inches. If greater depth is required the spreader makes a second pass. At those points where the leveling course feathers out, the pavement is painted for a strip 6 inches wide with a tack coat of RC-3 asphalt cutback.

On this prepared base, there is next applied the surface course consisting of 2 inches of bituminous concrete as previously specified. This is placed and rolled with a 10-ton roller. After rolling has been completed, the surface covering of seal-coat material is applied over the compressed wearing surface while the surface is still hot. This requires approximately 1½ to 3 pounds of seal-coat material per square yard. The seal coat is hand-spread over the surface and broom-dragged to assure a uniform distribution, and rolled into the finished pavement.

Sheet Asphalt

The sheet-asphalt surfacing is laid largely in the same manner. The asphalt cement used, however, is somewhat harder, with a penetration of 70-85. The binder stone meets these specifications:

Screen Size		*Percent*
Passing	¾" sq. sieve	100
"	½" " "	90-100
"	⅜" " "	40-75
"	#4 sieve	5-25
"	#8 "	0.5

Sand used for the wearing surface is a well-graded mix conforming to this analysis:

Screen Size	*Retained on*	*Percent*
Passing #8	#10	0 to 5
" #10	#20	2 to 10
" #20	#30	5 to 15
" #30	#40	8 to 25
" #40	#50	10 to 30
" #50	#80	15 to 40
" #80	#100	5 to 20
" #100	#200	10 to 25
" #200	....	0 to 5
Total passing #80 and retained on #200		20 to 35%

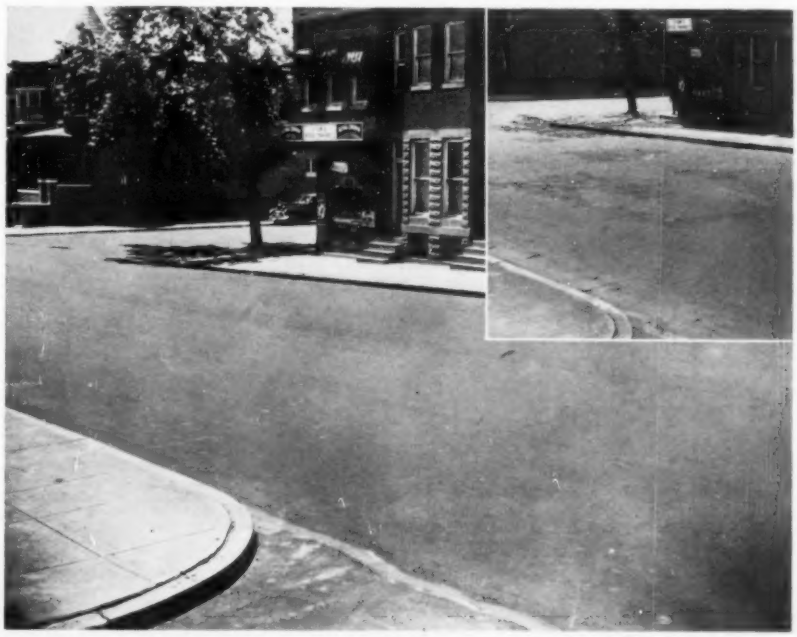
The finished pavement contains 10.3 to 11.3% bitumin.

In placing the sheet asphalt, the first step is again to carefully clean the existing surface. Where street-car rails are to be covered, the rails and adjacent area are given a coating of emulsion for a tack coat; however, instead of asphaltic concrete being used to fill the rail area, the specifications call for the use of wearing surface material.

After the rails have been covered and the surface thoroughly cleaned, the surface then receives a tack-coat of asphalt emulsion, and a leveling course of asphaltic concrete-binder. As is the case in the bituminous concrete surfacing, the leveling-course layer is painted where the layer feathers out. The paint coat is RC-3 cutback asphalt.

Following this there is applied a 1-inch asphalt-concrete binder course. To insure that ample gutter will remain, and the course will not tend to fill the curb, the binder is omitted for a distance of 12-15 inches of the curb. On this there is then applied the sheet-asphalt wearing surface. Where the wearing surface is "feathered out," the joints are smoothed with hot smoothing-irons. This occurs in the vicinity of catch basins, manholes, and the curb.

Baltimore's Bureau of Highways has set up a special asphalt section to handle this work exclusively. Baltimore has resurfaced 1½ million square yards to date (April to September 1948). An additional million square yards will have been completed before the paving season ends.



A Baltimore street after resurfacing. Inset shows previous condition.

New Life for an Old Shopping Area . . . . . .

By CLELAND AUSTIN
Chairman
Development Board
Montclair, N. J.

IF YOU were to enter Montclair by car, you would sooner or later find yourself on Bloomfield Avenue, Montclair's principal business street. If you had been told of Montclair's exceptional beauty as a residential community, you would discover no hint of that beauty in most of the business buildings on the Avenue. In fact, your drive along its length would prove a decidedly drab experience.

Montclair has long been conscious of the shortcomings of its shopping area and, spurred on by the local association of Bloomfield Avenue business men, the Town Fathers recently undertook to deal with this thorny problem. Several months ago the firm of Walter Dorwin Teague, one of the country's leading industrial designers, was engaged by the Town Development Board to prepare an over-all design for the Avenue along its entire business length. The "Teague Plan," so-called, is now on display in Montclair.

This plan is an unusual one in many respects. The country has seen innumerable designs for shopping centers. The recent Store Modernization Show in New York overflowed with layouts and models for such areas. But these were assumed to be new shopping districts set up on land not otherwise developed. The Teague Plan deals with a business street that has grown old in service. Few of its structures can be called new or modern. Many are at least middle-aged and still others antedate the Gay Nineties.

Out of such a hodgepodge, the Teague Plan undertakes to bring order and harmony. In most instances it proposes the modernization of existing buildings without involving structural changes and at a minimum of expense. New construction is suggested only where the existing buildings are completely outmoded.

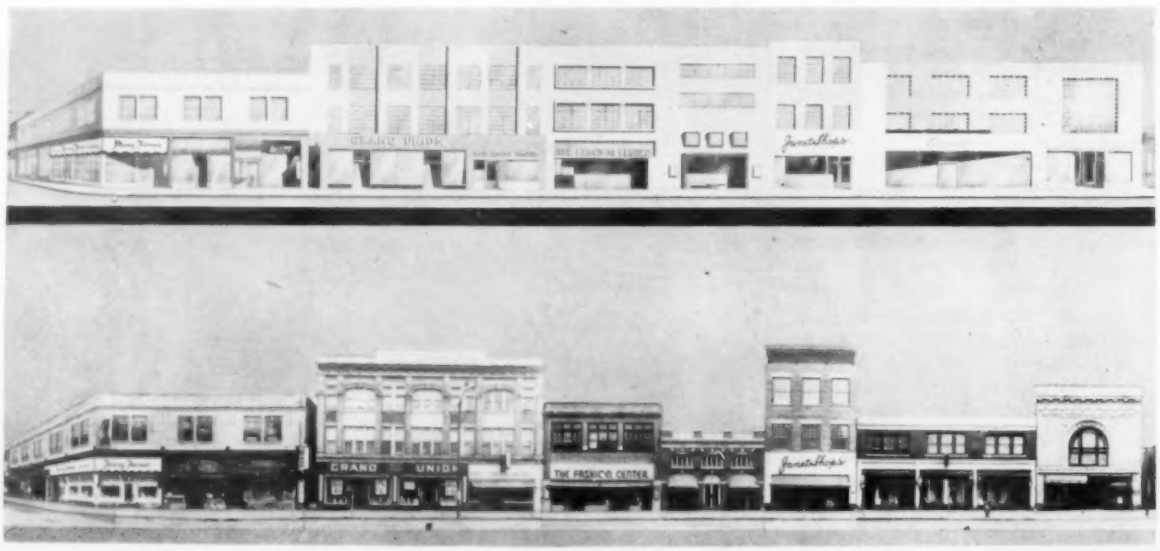
Eye-Opener to Merchants

The story of how so ambitious an undertaking ever reached the stage of actual planning is an interesting one. Back in 1944 a survey of Montclair's shopping habits was instituted by the local Chamber of Commerce. It proved an eye-opener to the merchants. It disclosed that the merchandise carried in Montclair stores compares favorably with that offered elsewhere. Nevertheless a shockingly large percentage of Mrs. Montclair's shopping dollars was being spent out of town—in New York stores, in nearby Newark, and in still nearer East Orange. It revealed what was, and what was not, bought locally and in many instances why. The net of the survey was that neither Mr. or Mrs. Montclair — most of the misters being commuters — were consistent patrons of their local stores. Here, in short, was a community with the highest per-family purchasing power in the East and third highest in the entire country, spending nearly half of that purchasing power outside the town.

Having before them this diagnosis of their business ills, the merchants courageously submitted themselves and their establishments to some searching self-analysis. One obvious remedy was a more attractive and convenient shopping district. The merchants and store owners came to realize that a close relationship existed between store fronts and dollar volume—between architecture and profits, between parking facilities and contented customers.

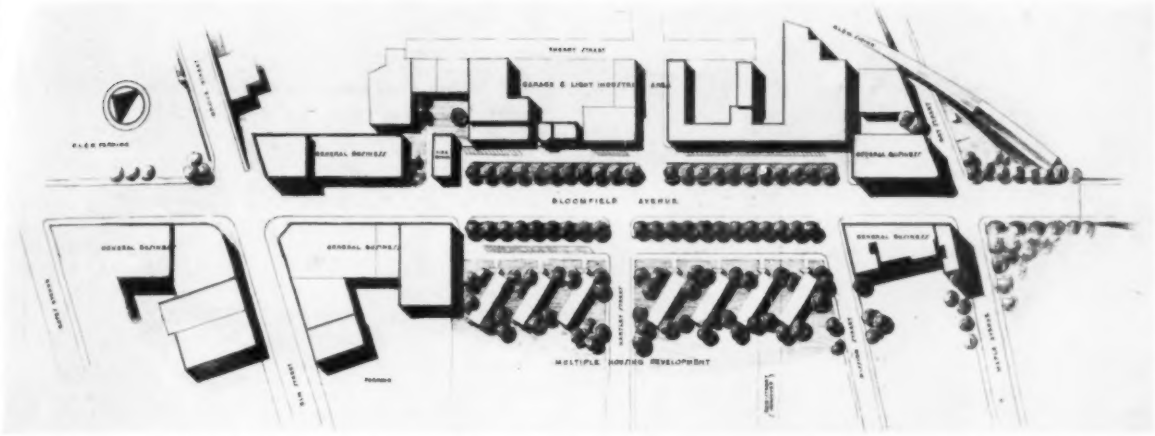
But diagnosis, while a step in the right direction, did not necessarily point to a reliable solution. More than eighty merchants had indicated their intention to improve their store fronts and this promised progress. It was felt, however, that something further was needed. To insure maximum results, an over-all architectural plan seemed essential so that alterations as made would be in the direction of a harmonious whole. And further, this over-all plan must be dramatized so that each individual establishment could visualize its own shortcomings and potentialities in relation to the over-all plan.

With this in mind, the merchants turned to the town government for



Almost any Main Street in the country would find much in common with these Montclair stores as they now look in the bottom strip. See how their appearance can be harmonized without major structural alterations, through group planning.

Montclair Development Board promotes over-all plan for improving mile-long main business street



Proposed plan of Bloomfield Avenue between Grove Street and Maple Avenue, showing some of the redevelopment proposed for the area, including a multiple-housing development set back from the business street. Note the use of trees.

guidance. The logical agency appeared to be the recently organized and community-financed Montclair Development Board. This Board recognized fully the difficulties that Bloomfield Avenue presented. Here was a typical "Main Street" that could be duplicated in countless American communities. It had come into being, a unit at a time, without plan or design. The average age of its structures might be in the neighborhood of 40 years, with only a few that could be characterized as modern either functionally or architecturally. With the passing of time, the street's "center of interest" had shifted with the whims or convenience of its shoppers, leaving behind a trail of increasingly outmoded and deteriorating establishments. The shortcomings of this particular "Main Street" were especially conspicuous because of the wide contrast between Montclair's shopping district and its residential areas.

Expert Analysis Precedes Plan

Several of the country's leading architectural firms and industrial designers were called in for consultation and suggestions. A committee of local architects was selected to evaluate the proposals and assist the Development Board in determining the final course to be pursued.

It was finally decided to tackle the street from end to end—almost a mile in extent—and the Teague firm was chosen to prepare the over-all plan. The Board was impressed not only with the quality of Teague's work at the World's Fair, where the firm had designed five of the principal buildings, but particularly with its success in selling "art" as a practical dollars-and-cents asset to hard-headed businessmen.

The Plan as presented to the town consists of 120 linear feet of panels some 30 inches high and averaging perhaps 40 inches in width. Below on the panels are continuing photographs of the street as it is, and above these are architectural renderings showing each of the more than 300 structures as it might be—the actual and the projected in close juxtaposition.

Modern Simplicity the Keynote

The entire avenue is developed in a simple, modern style with a dramatic use of glass, often on a two-story scale. Restful lightness and freshness is the principal effect, with the suggestion of stucco, or simply light-colored paint over the current drab brick, to unify the appearance of the shopping district. Outmoded wooden buildings are replaced with smart two-story shops. Second and even third stories for office and storage purposes have been added to existing structures to smooth out the now jagged sky line.

In harmony with Teague's attempt to keep individual expense to a minimum, simple remodeling jobs are suggested for a majority of the buildings. Effective demonstration is made of how present structures, like the Public Service Building, can be modernized by the removal of overhanging cornices, generous use of glass, and the integration of display signs into the design of the building itself.

Those promoting the plan have reiterated that it represents a guide to the individual merchant in working out his own plans and is in no sense meant to be arbitrary. It offers a multitude of designs from which the merchants and property owners can choose. The local Business Association, recognizing the importance of continuously working toward the ideal which this plan represents, is setting up procedures similar to those employed by the Fifth Avenue Association in New York. Whenever alterations or new construction are contemplated along the Avenue, plans for such construction will be studied by a committee from the Association. If it appears that these do not conform to the over-all plan, the committee will endeavor to convince the merchant in question that it is to his advantage as well as to his fellow-merchants', and to that of the street as a whole, to cooperate by adjusting his design to the over-all plan.

Paralleling the Teague Plan is a parking program instituted by the town government and already under way which, when completed, will supply space for more than 3,000 cars, either directly on the Avenue or less than a block therefrom. Five such lots are either completed or under way and the program will be expanded as rapidly as the work can be done.

Boost in Sales Expected

It is the expectation of town officials that the improvement of stores and store fronts along Bloomfield Avenue, together with the extensive parking program, will afford new stimulus to the sales volume of retail stores. It is held also that these factors, together with Montclair's exceptionally high buying power, will attract new business establishments to the community.

Kirkwood collector, whose horizontal wellpoints draw water from an aquifer that taps the Meramec River.

How Kirkwood's

By **JOSEPH KRUEGEL**
Water Superintendent
Kirkwood, Mo.

HAVING an adequate water supply without worry of continual low water and high overhead costs is a real relief to any water department official—a relief that this superintendent is enjoying to the fullest. It allows us of the water department to remember that there are other parts of our water works than an intake in a river that threatens to dry up each summer, and that even when this river has had adequate flow, it has delivered a turbid, hard-to-treat water through a transmission main that has constantly settled and developed leaks from an unstable sub-soil.

We were able to get this relief by installing a radial collector in a suitable aquifer adjacent to the Meramec River. Today we can look out on that river and see the turbidity of its water, which ordinarily we would have been treating, and add emphasis to our satisfaction with the present supply.

History

Kirkwood's history in municipal water distribution dates back to 1923, when officials here decided it would be to the best interest of the city to own and operate its own water system. Heretofore the St. Louis Water Company had been supplying water. Our city decided to acquire and remodel a water plant that had been supplying water to a resort area known as Meramec Highlands.

The capacity of the plant at that time was approximately one million gallons per day, using water from wells. In 1933 our consulting engineers advised that the constant failure of these wells indicated that we should draw river water and treat it in a filter plant.

Continuous Difficulties

The intake structures, installed about 1,200 feet upstream from the plant, caused trouble almost constantly. This long suction line developed air leaks caused by the constant shifting of gravel strata, probably induced by the dredging in this area.

These leaks, accompanied by eventual lowering of the river level, caused maintenance costs to jump, and the dry summer months forced a further study of adequate supply. We were aware of the inability to secure adequate raw river water in dry-weather months. We knew that rapid fluctuations of the river level were costing considerably more than was desirable.

On top of that, our demand had grown. Over a period of years, the capacity of the plant had been increased to 2 mg per day, supplying about 12,000 people. Furthermore, the city had taken over the responsibility of supplying water to two other towns, which were without a public water supply. This we ultimately faced the need for a supply of 4 mg per day.

What Was Required

We felt that if we could secure an adequate, stable, clear water supply, the load on our treatment operation could be so reduced as to make as few as possible structural changes. We knew that with the continued use of raw river water, a new intake structure was necessary, inasmuch as emergency lines had to be provided in the past summer season.

Having some knowledge of the underground water characteristics, we were impressed with the possibilities of using a radial collector installed by Ranney Method Water Supplies, Inc. Inasmuch as no hydrogeological survey had been made, we were curious to learn about the underground formations and possible locations which might be used in connection with such construction. We felt that if this type of water collector could be employed, our present water plant, with a few mechanical changes, could be very well adapted to our needs without throwing us into a price spiral.

Consequently, we instructed the company to make a hydrogeological survey. From this analysis we determined that while we could expect water of uniform temperature, slightly harder, with little more iron than we were accustomed to in raw river water, we certainly could expect this water to be constantly clear.

Needed Relief Promptly

As is so often the case, "time was of the essence." We needed some sort of raw water before the next dry season. Although the survey was not fully completed, we felt that the results were so promising that we instructed Ranney to proceed with the construction.

Construction started on December 28, 1946, for a collector which, it was estimated, would be capable of supplying 4 mg per day. The groundwater sur-

Radial Water Collector Works

Development of a groundwater supply recharged by river infiltration saves this Missouri city's water supply from disaster

vey indicated that probably much more than this would be possible, inasmuch as draw-down observations were encouraging. The collector was completed on March 17, 1947. Tests made with the completed collector, with approximately 900 feet of collection tubes, indicated a total output of 7 to 8 mg per day. We have incorporated Chronoflow installations to determine actual draw-down, but deliveries as they are today still find us with the equipment now on hand but not installed. So the actual figures are still to be determined.

Collector Details

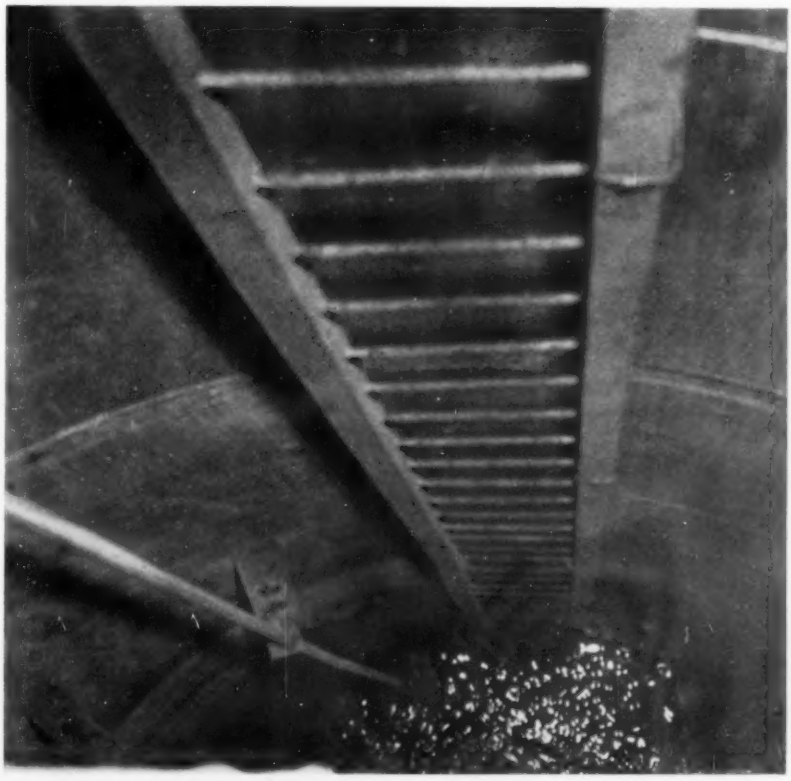
The collector structure is a caisson located 70 feet from the river's edge. It is 13 feet in diameter, with 11 collection tubes extended riverward and parallel with the river, confined to approximately 180° of the circular structure, with proper control valves for each collection tube extended to the operating platform. The walls of this structure are of reinforced concrete 18 inches thick. The structure reaches a depth of 53.9 feet and extends approximately 34 feet above ground level for protection against high water. We are using a discharge below ground in this instance to avail ourselves of the present existing suction lines, remodeled to act as discharge lines.

Pumps Arrive In the Nick of Time

The installation is provided with two single-stage Peerless Deepwell turbine pumps. Delivery was held up until September 18, 1947. Fortunately they arrived just in time to prevent the failure of our water system, for emergency suction lines by that time were unable to supply enough water for the plant and we were forced to place the incomplete installation into operation.

The water supply from this collector is not a great deal harder than our usual river supply, and while we do not have a complete breakdown on productions costs, we know that present costs for securing and treating water amount to 1.4 cents per thousand gallons.

All things considered, we are today able to meet our requirements with a clear, palatable water of good quality. And we have a supply that will be independent of the viscissitudes of the seasons and their effect on water quality.



Looking down the collector caisson, one can see the water brought in by the horizontally laid wellpoints. The walls are made of reinforced concrete.

Urban Progress in Latin America

By ANATOLE A. SOLOW, *Housing and City Planning Specialist, Pan-American Union*

Report from the Field— Planning Problems in Guatemala, El Salvador, and Costa Rica

I WAS called by the Government of Costa Rica to advise on the planning of its capital city, San José. On my way down I had an opportunity to observe municipal public works, low-cost housing, and city planning in Guatemala and El Salvador, two important Central American Republics.

At a distance of several thousand miles, one is likely to forget that each of these countries has quite distinct characteristics, that Guatemala, for instance, contains a predominantly Indian population; that in El Salvador, one of the most overpopulated and yet one of the richest coffee-producing countries, the wealth is concentrated in the hands of a few, while the masses live in abject poverty; that Costa Rica is essentially a nation of middle-class families and small land-owners. Yet, in spite of all these differences, the problem of intelligently guiding an orderly growth of urban centers is usually the same.

Traffic Requires Coordinated Planning

What surprises one most is the phenomenal growth of the capital cities and the increase in traffic along streets far too narrow. It is a fair estimate that in Guatemala City, San Salvador, and San José (Costa Rica), automobile traffic has *doubled* from 1946 to 1948. One sees proportionately more late-model cars than in the States. These cities were laid out in the gridiron pattern according to the Spanish colonial practices with street widths of 21 to 25 feet. In these narrow channels flows a heavy stream of buses, trucks, automobiles, bicycles, motorcycles, pushcarts, oxcarts, and innumerable pedestrians (the Latin Americans being accustomed to stroll leisurely on the streets). The right of way belongs to the most determined driver.

The "hardening of the arteries" process advances rapidly: first, one-way traffic, then parking on one side only, then no parking at all, but after that, what? Perhaps earthquakes, prevalent in this area, are the solution—for unfortunately there is little sign of coordinated planning. Since there are no trained city planners, civil engineers are trying to do the best they can. However, an awakening is taking place. Wherever I went, I found an eager interest in techniques used in the States to provide for off-street parking and other means to control traffic movement. The need for master planning (*Plan Regulador*) is slowly being recognized, and an intensive exchange of information between South, Central, and North America would be of immense value, not only in the form of publications, but by means of congresses, conferences, lecture tours, exchange professorships, etc.

It is hardly possible to describe the vital role which the airport has begun to play in these countries which lack adequate surface transportation. A 50-minute trip by plane from Guatemala City to San Salvador is probably safer than the ten-hour bus ride and is as common as hopping a train from Washington to Baltimore.

Soaring Property Values Along Pan-American Highway

The Pan American Highway—although not yet completed—is beginning to have an increasing influence. Property values along the finished portions, especially on the outskirts of the cities, have sky-rocketed. Because of the limited extent of paved roads and utilities, land values for such serviced areas are relatively higher (except in the central sections) than in corresponding areas of U. S. cities.

Expansion has brought with it a tremendous increase in private as well as public building. But the shortage of building materials, most of which must be imported from the States, makes it impossible to satisfy the building hunger. There is a virtually unlimited demand for cement, if it could be had at a reasonable price. Guatemala, which has its own cement factory, has embarked on an ambitious program of public works. A main sewer, 12 feet in diameter, is now being laid in the center of the city. Sixteen large schools and 50 smaller ones are under construction throughout the country.

In spite of a few small-scale attempts at public housing, low-cost housing

This is a model of Roosevelt hospital which is now nearing completion just outside Guatemala City. The building at the far left is a school for nurses. Chief architect is Edmond Whiting.

lag sadly behind, and at least one-quarter of the capital cities' population lives generally in slum conditions which defy description. In the past, only an insignificant number of dwellings for the lower-income class has been built. It is only recently that some serious thought is being given to housing programs. However, looking at the extensive slums on the fringes of cities, one cannot avoid the conclusion that the day is not far off when provision of decent low-cost housing will be considered as the most urgent necessity.

Parks, Markets, and Laundries

From the municipal point of view, the public park, the public market, and the public laundry are of the greatest importance. In Guatemala, several modern markets in concrete and steel are nearing completion, distributed in a manner to serve as focal centers of various city districts. One of the first jobs proposed by the new Costa Rican Government is a similar program of decentralized markets. San Salvador has completed a model public laundry (see photo), in cooperation with the Institute of Inter-American Affairs (the former office of the Coordinator of Inter-American Affairs).

This report would be incomplete without mentioning the important construction work undertaken by the Institute. Started by the former Office of the Coordinator of Inter-American Affairs, and continued on a reduced scale by the present Institute, the U. S. Government has built, in cooperation with the national governments of the different countries, numerous water-supply and sewage-disposal systems, health centers, nurseries, public markets, and laundries. It has served not only the capital cities, but has gone out into the small communities. Among the outstanding works are the water-purification plant at Tres Rios (to serve San José), and the central market and a model community laundry in San Salvador.

Here is a model public laundry and bathhouse in San Salvador. Washtubs with piped water and drying yards are in front. The building containing showers and toilets is in the left background.

Guatemala's New Roosevelt Hospital

The most impressive achievement is the Institute's hospital-building program. More than a dozen modern, well-equipped hospitals are being completed in different Latin American countries. In El Salvador, for instance, two hospitals of 30 and 40 beds each are under construction. The ideal solution for small communities is considered to be a combined hospital and health center. In Guatemala City a series of small dispensaries strategically located will service all districts of the city.

However, the pride of the Institute and of Central America is the gigantic $4,000,000 Roosevelt hospital, which is nearing completion. Located just outside Guatemala City, along the new Roosevelt Boulevard, this complex of buildings will provide for 2,000 beds, a maternity ward, and a school for nurses. There are few hospitals anywhere in the world which rival the Roosevelt hospital with regard to layout, design, site planning, or architecture.

Institute Maintains Staff

The design of the hospitals of the Institute is under the direction of Mr. Edmond Whiting. In each country, the Institute maintains field parties and technical staffs from the United States. Projects are planned jointly by the Institute and the respective government.

The application of health and sanitation measures has become an essential element in the conservation of human resources in Latin America. The work carried out by the Institute of Inter-American Affairs leaves one with the conviction that there is no better way for creating friendship between the United States and the nations of Latin America than through cooperative and constructive field projects.

Two large schools of this type are nearing completion in Guatemala.

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Wilmington, Del., Gets New Arteries

New streets built with gas-tax funds use high-grade sheet - asphalt construction

Concrete bus stops, 12 by 80 feet, extend through the asphalt for use by buses and trolley coaches. Here the asphalt surface has not yet been laid.

THE motorist profits whether he is on a long-distant jaunt or making a short run downtown for some groceries with the new paving program now being completed in Wilmington, Del. The streets being improved include Pennsylvania Avenue and Lancaster Avenue, both principal connections to out-of-city routes. The paving is the work of the Delaware Department of Highways.

The paving is all exceptionally well laid. It consists of sheet asphalt laid on a portland-cement concrete base. The concrete is 8 inches thick laid on 6 inches of compacted quarry-screenings, all passing a ¼-inch screen. This provides a dense, firm base that many would feel suitable for carrying a heavy load if it only had a hot-application wearing surface over it.

High-Strength Concrete Base

The concrete is of the same mix that is used for straight portland-cement concrete paving. It is laid without expansion joints, and with what Delaware engineers choose to term "crack control" rather than contraction joints. A joint is supplied at 15-foot intervals, thus providing a frequency that insures a crack that will not open wide. There are no dowel bars used in these joints. The transfer of the load is accomplished by the interlock of the fractured concrete at the joint. Dowel bars are supplied only at the end of each day's run.

The 58-foot-wide concrete street on Pennsylvania Avenue was laid in four 11-foot strips and two 7-foot. To join the two strips together half-inch dowel bars are used at 5-foot centers. Each dowel bar is 4 feet long. Other than this, there is no reinforcing in the slab. The surface of the concrete is "scratched" transversely at about 2-inch intervals. The "scratches" leave a groove approximately ¼ inch deep. On each side of the pavement there is supplied a curb 9 inches high, laid separately after the slab is in.

The concrete was supplied by agitator trucks from a central mix plant. However, the specifications do not allow chuting the concrete directly to the subgrade. Instead, it is placed in a "hopper bucket" and transported to the subgrade by a crane. This avoids the possibility of segregation.

In building the sheet-asphalt surfacing, the Delaware Highway Department has specified an asphalt cement consisting of 50% petroleum asphalt and 50% natural Trinidad asphalt, with a penetration of 50-60.

This picture shows Lancaster Avenue all ready for paving. The concrete base is laid on six inches of limestone screening.

A Huber and Buffalo-Springfield roller parked on the concrete base. The ridges in the base improve the bond.

feel that they are obtaining sufficient bond.

The binder course uses an aggregate with 100% passing the ¾-inch screen. In a typical batch approximately 1,400 pounds of aggregate and 475 pounds of sand are used. The asphalt-cement content is approximately 5%.

The sheet-asphalt surface course uses a well-graded sand with 100% passing the #4 screen. About 3% limestone dust is added to the mix for a filler. The asphalt cement content for the surface course is approximately 11%.

The sheet asphalt is laid by a Barber-Greene paver and rolled with a Huber 10-ton roller. A Buffalo-Springfield roller also is used on certain portions of the work.

Looking down Pennsylvania Avenue with the finished part in background. The Barber-Greene paver is at the left.

The sheet asphalt is laid on the concrete without the use of a tack coat, since the engineers feel that the addition of the asphalt in the tack coat would tend to make the layer too rich. By bringing it out hot and laying-in on the corrugated concrete surface, they

Bus Stops

In order to accommodate trolley coaches and buses, the designers built concrete bus stops at appropriate locations in the street. These are 12 feet wide and 80 feet long and consist merely of extending the concrete base into the surface of the pavement. In the top of the concrete is a wire mesh of #2-gauge longitudinal at 6 inches and #4-gauge transverse at 12 inches.

The construction is part of the work of the District Engineer located in Wilmington, C. C. Reynolds. Paul Dabson is Construction Engineer.

They Buy Hospital Care on the Water Bill!

By DAVID MARKSTEIN

THERE is only one community in the United States where citizens can prepay their hospital bills along with paying the city for their water. That place is Magnolia, Miss. There, Blue Cross hospitalization insurance is available to every citizen, whether he works or not, and without regard to whether he belongs to any group.

It all came about when Blue Cross moved into the State of Mississippi in January of this year, and Dr. A. V. Beacham, Magnolia physician, attended a meeting at the state capitol in Jackson to find out what it could mean to Magnolia.

He came back so fired with enthusiasm for low-cost hospitalization insurance that he wanted to see all citizens have it. How could the Blue Cross benefits be made available to everyone? To find an answer, Dr. Beacham called a meeting of civic leaders. Present were Mayor E. E. Stewart; City Attorney and Rotary Club President J. H. Price; Lions Club President I. M. Wetter; Mrs. J. W. Harrison, representing the Twentieth Century Club; Mrs. Claude Lampton, representing the Magnolia Garden Club, and Drs. G. W. Robertson, J. M. Smith, and W. S. Lampton. It took only a brief familiarization with the Blue Cross objectives to sell this group on its merits for Magnolia. The women's clubs agreed to do the door-to-door selling of memberships. The big question before the group was —how to bill the members?

Suggestions came thick and fast, most of them having to be discarded for various reasons. The group knew the necessity of keeping the hospitalization and medical plan a purely civic idea. Thus, private companies, like the utilities, could not be used. Then somebody suggested the city's water department. Why not bill the Blue Cross plan's monthly payments right along with the water bill? This would reach the greatest number of residents.

There was only one stumbling block. The City Council had to be persuaded of the benefits of such a drastic measure. But Dr. Beacham sold them his bill of goods, and the plan passed unanimously. Next it was necessary to sign up the citizens.

Dr. Beacham went from club meeting to church meeting to association meeting, talking his health plan. Movies were shown. Every citizen-prospect received a personal letter from the civic group. A task force of 20 women went to work. In two weeks, from May 1 to May 15, they signed up approximately 800 persons out of a possible 1,000.

The Blue Cross plan in Magnolia became a reality on June 1, when the first beneficiary was X-rayed.

"I look forward," Dr. Beacham says, "to the day when every person in and around the city will be a member. Farm families can belong to Blue Cross through their Farm Bureau Federation. This leaves to be reached only those who are neither farmers nor city water users. As the plan develops, we hope to bring them in too."

EDITORIAL NOTE. The Blue Cross Commission of the American Hospital Association, Chicago 10, Ill., is the coordinating agency for all Blue Cross plans. At present there are 90 plans serving communities in 47 States, the Territory of Puerto Rico, and 8 Canadian Provinces. Total enrollment in these plans exceeds 30 million.

The Blue Cross Commission informs THE AMERICAN CITY that while Magnolia's method of collecting the Blue Cross payments by billing them on the water bill is believed to be unique, other plans have used somewhat similar devices for collecting payments. For example, some plans have had Blue Cross payments added to electric light bills, while others have made arrangements with local banks to have payments deducted from subscribers' bank or checking accounts at regular intervals. Plans have also reported the use of American Express offices as collection agents, and in one area the city clerk has acted as a collection representative.

Gallons or Cubic Feet

What is the proper unit of water measurement for metering purposes?

ONE apparent point of inconsistency is lack of agreement among waterworks men on the use of a uniform unit quantity for customer billing. The fact that gallons are used in one city and cubic feet in another seems illogical.

Actually it is not inconsistent at all. The point is that the water utility wants to know the *quantity* used. Whether this quantity is gallons, cubic feet, quarts, or liters is relatively immaterial. One always bears a fixed relation to the others. All give an accurate measure.

"Cubic feet" is a convenient unit for measuring gases. And when manufacturers developed metering equipment so that it could measure water accurately on a small scale, it was natural that they should employ this same unit for water.

"Cubic feet per second" is also a convenient unit for measuring water in large quantities. Here again, when the manufacturers by careful engineering produced an inexpensive meter that could measure small quantities of water, it was only natural that they should carry over the cubic-foot measure.

The function of water in a particular community sometimes has a bearing on the quantity used. For example, one western city, which furnishes water for irrigation as well as domestic and industrial purposes, uses the miner's inch as the unit of water measurement.

As we all know, the amount of water used by a domestic customer is relatively small, when compared, for example, with the flow in a river or drainage area.

The fact also is that the customer has some idea of what you are talking about when you speak in gallons. He often uses it to buy gasoline, milk, ice cream, and other familiar products. He rarely, if ever, has occasion to use the term "cubic feet." Consequently, if you bill him in gallons you bill him in a quantity he can visualize. He has some notion of the amount of water he has used since the last billing period.

Interestingly enough, at one meeting of water-works men, this point was brought out as an advantage for the use of cubic feet. It was argued that if the customer could not visualize the quantity of water, he would be less inclined to argue that the figure was too high.

Consequently we can see that for the purposes of measuring, there is no difference between the use of gallons or cubic feet. Both will give an accurate account of the water used.

From the standpoint of the small user, the gallonage unit gives the customer a familiar quantity that he can visualize. Functionally either is equally good. On the basis of customer convenience, the gallonage figure has a slight edge in preference.

Manitowoc, Wis.

Rates

First	200 cu. ft.	included in service charge and/or minimum bill for respective size of meter plus:
Next	800 cu. ft.	14c per 100 cu. ft.
"	2,000 cu. ft.	10c " " " "
"	12,000 cu. ft.	8c " " " "
"	35,000 cu. ft.	5c " " " "
All over		4c " " " "

Minimum Charges

⅝" meter	$ .35 per month
¾" "	.50 " "
1 " "	.75 " "
1½" "	1.25 " "
2 " "	2.00 " "
3 " "	4.50 " "
4 " "	8.00 " "
6 " "	16.00 " "
8 " "	30.00 " "

Rural service is the same as for urban, plus 25%. Gross rates are determined by adding 5% to net rates, but not less than 25c nor more than $25 per each monthly bill. The difference between the gross and net bill constitutes the discount for prompt payment.

The City of Manitowoc is charged for fire protection the sum of $3,166.66 per month to cover the use of and the utility's investment in pumping plant, storage facilities, distribution mains, fire hydrants, and connections thereto, in the system as of January 1, 1943, except those which are privately owned.

General Data

Population served	30,000
Services	5,669
Meters	5,820
Hydrants	481
Miles of mains	72.65
Storage, ground	underground, treated 3 mg
Storage, pressure	overhead 1¼ mg
Treatment	Chlorination
Average demand	5 mgd
Plant capacity	16 mgd

Water Characteristics	*Treated*
$CaCO_3$	50 ppm
Fe, Mn	——
pH	7 - 7.5
Temperature	40-60° F.

Customer Costs Per Month

3,000 gals.	(400 cu. ft.)	$ .63
5,000 "	(667 cu. ft.)	1.05
10,000 "	(1,333 cu. ft.)	1.87

RICHARD CANNARD
Gen. Mgr., Manitowoc Public Utilities

Lincoln, Ill.

Rates Per Month

First	300 cu. ft.	or less 75c
Next	700 cu. ft.	22c per 100 cu. ft.
"	1,500 cu. ft.	15c " " " "
"	97,500 cu. ft.	12c " " " "
All over		6c " " " "

Net Minimum Bill Per Month

⅝" meter	$ .75
¾" "	1.35
1 " "	2.75
1½" "	5.50
2 " "	8.00
3 " "	12.00
4 " "	25.00
6 " "	55.00

Municipal fire protection ..$28.00 per hydrant

Private fire protection

Size of service	*Net Monthly*
2"	$ 3.60
3"	5.40
4"	7.50
6"	15.00
8"	30.00

General Data

Population served	12,752
Services (100% metered)	3,147
Hydrants	252
Miles of mains	39
Supply	Wells
Treatment	Chlorination
Plant capacity	3.5 mgd

Customer Costs, Net (Per Month)

3,000 gals.	(400 cu. ft.)	$ .97
5,000 "	(667 cu. ft.)	1.56
10,000 "	(1,333 cu. ft.)	2.79

Rates became effective June 25, 1948.

H. E. BRAUNIG, *Vice-President*
Central Illinois Electric and Gas Co.
Rockford, Ill.

Corona, Calif.

Rates Per Month

First	700 cu. ft.	$1.25 per 100 cu. ft.
Next	1,300 cu. ft.	.15 " " " "
"	3,000 cu. ft.	.12 " " " "
"	10,000 cu. ft.	.10 " " " "
All over		.08 " " " "

Minimum Charges Per Month
(based on the size of the meters)

⅝" meter	$ 1.25
¾" "	1.75
1 " "	2.50
1½" "	4.50
2 " "	6.00
3 " "	10.00

Temporary promotional rate schedules are:

First	1,500 cu. ft.	$1.80
Next	3,500 cu. ft.	.11 per 100 cu. ft.
"	10,000 cu. ft.	.10 " " " "
Over	15,000 cu. ft.	.08 " " " "

Each of the minimum monthly charges entitles the users to the quantity of water which that minimum monthly charge will purchase at the monthly quantity rates above. All municipal users of water other than for fire hydrants, including public buildings, schools, and irrigation of parks and grounds, is charged at the regular meter rate.

There is no charge for water-service installations, water services for sprinklers, or for private fire protection.

A monthly charge of $1 is made for each city owned fire hydrant installed on a 4-inch main or larger, and a charge of $1.50 is made for each fire hydrant owned by the water company and installed on a 4-inch or larger main.

General Data

Population served .....(estimated)	10,000
Services	2,675
Meters	2,500
Hydrants	120
Treatment .....Chlorine	

Customer Costs Per Month

3,000 gals. (400 cu. ft.)	$1.25
5,000 " (667 cu. ft.)	1.25
10,000 " (1,333 cu. ft.)	2.30

C. M. Scoville, *Secretary*
Corona City Water Company

Bay City, Mich.

Rates (Quarterly basis)

Service Charge

5/8" meter	$ 2.00
3/4" "	2.80
1 " "	4.00
1 1/4" "	5.50
1 1/2" "	7.00
2 " "	11.00
3 " "	20.00
4 " "	30.00
6 " "	60.00
8 " "	100.00

Water Rates Per Month

First 20,000 cu. ft.	14c per 100 cu. ft.
Next 180,000 cu. ft.	10c " " " "
All over .....8 1/2c " " " "	

Bills are to be rendered quarterly. A discount of 10% from above rates will be allowed if paid on or before discount rate shown on bill. Rates outside the city are double those shown above.

Fire Protection and Sprinkler System Service

Size	Per Annum
2"	$10.00
3"	15.00
4"	20.00
6"	25.00
8"	75.00

Bills will be rendered annually in advance and if paid on or before discount date shown on bill, 10% discount will be allowed.

General Data

Population served	65,000
Services (metered)	14,647
Services (unmetered)	600
Hydrants	1,178
Miles of mains	175
Supply .....Saginaw Bay (Lake Huron)	
Treatment .....Lime soda ash	
Average demand	6 mgd
Plant capacity	14 mgd

Water Characteristics

	Raw	Treated
$CaCo_3$	120 ppm	35 ppm
Fe & Mn	——	——
pH	7.8	9.1
Temperature	52° F.	

Customer Costs Per Month

3,000 gals. (400 cu. ft.)	$1.10
5,000 " (667 cu. ft.)	1.44
10,000 " (1,333 cu. ft.)	2.28

These rates were adopted Dec 29, 1947.

The city pays the water department $10,000 per year for hydrant rental. No other contributions are made to the water department and no contributions are made by the department to the city. The city pays for all water used in public buildings.

Alex Krzyminski
Superintendent

Sault Ste. Marie, Mich.

Rates (Quarterly basis)

Domestic

5/8" meter ..	$1.50 for first 500 cu. ft. or less
3/4" " ..	2.25 for first 500 cu. ft. or less
Next 500 cu. ft.	$ .16 per 100 cu. ft.
" 9,000 cu. ft.	.09 " " " "
" 90,000 cu. ft.	.07 " " " "
" 200,000 cu. ft.	.05 " " " "
All over	.01 " " " "

Commercial Service Charges

1 " meter	$ 3.00 per quarter
1 1/2" "	4.50 " "
2 " "	7.50 " "
3 " "	15.00 " "
4 " "	22.50 " "
6 " "	45.00 " "

Commercial Metered Rate

First 10,000 cu. ft.	$.09 per 100 cu. ft.
Next 90,000 cu. ft.	.07 " " " "
" 200,000 cu. ft.	.05 " " " "
All over	.01 " " " "

Where meters are not used, the following flat rate per year will be charged for the use of water:

Dwelling houses: Seven rooms or less occupied by seven persons or less, including sink and lavatory	$8.00
Each additional room	.80
Each additional occupant in excess of one to each room	.60
Water closet	2.00
Each additional water closet	1.00
Bathtub	2.00
Each additional bathtub	1.00
Stationary laundry tub	2.00
Each hydraulic motor washing machine	2.60

The city collects $5,000 for hydrant rental. The water department makes no payment to the city in lieu of taxes.

General Data

Population served	16,600
Services	3,605
Meters	2,548
Hydrants	302
Valves	422
Miles of mains	48 29
Treatment .....Chlorine	
Average demand	5,500,000
Plant capacity .....17,568,000 gpd (24 hrs.)	

Water Treated

	PPM	Grains per Gal.
Total hardness	38.5	2.24
Alkalinity	44	2.56
Iron .....none		none

Customer Costs Per Month

3,000 gals. (400 cu. ft.)	$1.50
5,000 " (667 cu. ft.)	1.82
10,000 " (1,333 cu. ft)	2.66

H. A. Sherman
Water Works Superintendent

Petersburg, Va.

Rates Per Month

First 2,000 cu. ft.	$3.00 per 1,000 cu. ft.
Next 3,000 cu. ft.	2.00 " " " "
" 10,000 cu. ft.	1.00 " " " "
All over	.60 " " " "

Meter Rents

5/8"	$ .20 per month
3/4"	.30 " "
1 "	.40 " "
1 1/2"	1.00 " "
2 "	1.50 " "
3 "	2.50 " "
4 "	4.00 " "
6 "	6.00 " "

Minimum charge for water, $1, plus 20 cents meter rent and 5% city tax; minimum charge, $1.25.

General data

Population served	40,000
Services (100% metered)	7,255
Hydrants	620
Valves	980
Miles of mains	100
Service levels	2
Storage, ground .....raw	3 mg
overhead	3/4 mg
Supply	River
Treatment .....Rapid sand filter	
Average demand	4 mgd
Plant capacity	7 mgd

Water Characteristics

$CaCo_3$	38.6 ppm
Fe, Mn	Trace
pH	8.8
Temperature	55-77° F.

Customer Costs

3,000 gals. (400 cu. ft.)	$1.40
5,000 " (667 cu. ft.)	2.20
1,000 " (1,333 cu. ft.)	4.20

There is no fire-hydrant rental. All revenues go to the city's General Fund. Expenses are met from a city budget.

Charles Davis
Water Superintendent

Hamilton, Ohio

Rates Per Month

First 300 cu. ft.	90c
Next 300 cu. ft.	26c per 100 cu. ft.
" 400 cu. ft.	24c " " " "
" 1,000 cu. ft.	22c " " " "
" 8,000 cu. ft.	20c " " " "
" 40,000 cu. ft.	18c " " " "
All over	15c " " " "

Meter Rental Rates

5/8"	$2.00 per year
3/4"	3.00 " "
1 "	4.00 " "
1 1/4 - 1 1/2"	9.00 " "
2 "	18.00 " "
6 "	48.00 " "

General Data

Population served	60,000
Services (100% metered)	13,181
Hydrants	874
Valves	1,318
Miles of mains	113
Supply	Wells
Storage, ground .....11.5 mg	
Storage, overhead .....75,000 gals.	
Treatment .....Lime—soda ash softening	
Average demand	5.6 mgd
Plant capacity	6.0 mgd

Water Characteristics

	Raw	Treated
$CaCO_3$	95 ppm	30 ppm
Fe	0.4 ppm	trace
Mn	0 1 ppm	——
pH	7.4	8.7
Temperature	56° F.	57° F.

Customer Costs (meter rent not included)

3,000 gals. (400 cu. ft.)	$1.16
5,000 " (667 cu. ft.)	1.85
10,000 " (1,333 cu. ft.)	3.37

These rates became effective October 1947 and help finance new construction.

The water department makes no charge against the city for fire protection in the form of hydrant rental. The city has a utility-commodity tax whereby the customer is charged 14% on the total amount of his utility bill. This tax is equivalent to the general fund receiving 14% of the customer's bill, 10% from the utility fund and 4% directly from the customer.

H. W. Augenstein
Water Superintendent

VOTE *November 2nd*

The chances are one in three that you will be one of the 50,000,000 voters fortunate enough to use an AUTOMATIC VOTING MACHINE when you cast your ballot for President.

If you are a voter in one of the 3,775 cities and towns where AUTOMATIC VOTING MACHINES are used

- **You will have assurance that your vote will be secret**
- **Your vote will be accurately counted**
- **Results of the election in your community will be known minutes after the polls close**
- **You will enjoy the satisfaction of knowing that your city or town will be reducing election costs**

If your community is interested in a more efficient and less expensive voting system, write

Automatic Voting Machine Corporation

Jamestown, New York

FIDO Clears the Fog for Los Angeles

By COLONEL CLARENCE M. YOUNG, *General Manager*
Department of Airports
Los Angeles, Calif.

THE first commercial installation of FIDO, the army's label for an airport fog-dispersal unit, is being placed at Los Angeles Municipal Airport. The dispersal equipment made a spectacular name for itself during the war when it put fog-bound British airports on an all-weather basis. Mayor Fletcher Bowron of Los Angeles intends that this city's airport shall have the same advantage.

Pipe to be used in this project will range from 3 inches to 12 inches. From 450 to 1,800 gallons of fuel oil will be pumped through the lines per minute during periods of two to four minutes per landing. Length of time the system will have to operate will be variable, for it is possible that stacking of planes will enable landings at one-minute intervals. We must wait until FIDO goes into operation before we can decide how many planes can be landed with one "burning-off," or whether it will be necessary to ignite the system for each landing. We hope we can bring in more than one plane per burning in order to reduce costs.

The fog-dispersal system consists of pipeline bracketing 2,000 feet of approach zone and 4,000 feet of runway at 400- to 870-foot widths. The widths are designed to avoid damage to incoming aircraft. The pipeline feeds a series of burners that will "burn away" the fog for at least 400 feet in the air. This will form a channel of clear air in an atmosphere filled with dense fog. More than 32,000 feet of pipe will be used in the system. The fuel oil will be pumped at 1,000 psi and will be ignited electrically. Nearly 400 trial burners will be used.

The new system will cost a total of $820,000. The Federal Government is supplying 54% of the cost and the city the balance. Air lines will reimburse the city for this cost over a five-year period. The equipment supplements an instrument-landing service already in operation.

The present installation is a marked advance from the crude fog-dispersal units used on the British Isles. Since the war, extensive experiments have been conducted at Arcata, Calif., and the results have produced the present development.

"The FIDO system will not be the only safeguard for landings at the Los Angeles Airport," states Commission President Robert L. Smith. "By the time FIDO is ready for use, we will have put into operation such other landing aids as ground-control approach, surveillance-radar, and high-intensity approach lights. These aids, plus instrument-landing service which is already in use, are expected to remove all difficulties encountered when fog conditions prevail."

Greatest use of FIDO is expected during the months of November through February, when fog conditions are most prevalent. The system will be operated by the Department of Airports personnel, who will use it at the request of incoming pilots.

The FIDO installation is being placed in operation under the direction of the Civil Aeronautics Authority, the City of Los Angeles, and the major airlines serving this area, based on plans developed by the Engineering Department of the City's Department of Airports.

Ground-breaking ceremonies at Los Angeles Airport for the $820,000 FIDO fog-dispersal system. Participating were, from left to right, Col. C. M. Young, General Manager, Los Angeles City Department of Airports, Mayor Fletcher Bowron, and Joseph A. Hartley, Board of Airport Commissioners.

Los Angeles to Build Three Hydroelectric Plants

THE Board of Water and Power Commissioners recently authorized a $4,000,000 power revenue bond issue to finance construction of the Owens Gorge project. The action is subject to approval of the mayor and the city council.

The Gorge project involves three hydroelectric plants of 37,500-kw capacity each and a new 265-mile transmission line to bring the power supply to Los Angeles.

Under a new Charter amendment adopted by the voters last June, the Department is empowered to issue revenue bonds in the amount of the difference between earned surplus and bonded debt of each system.

In recommending the bond issue, General Manager and Chief Engineer Samuel B. Morris told the Board that "in order to maintain a balance between bonded indebtedness and earned surplus, about 50% of all construction should be financed through power revenue and the remainder by issuance of bonds."

Because it is a single project and of considerable magnitude, he pointed out, the Gorge development is ideal as first to be financed under the new Charter amendment.

Part of a program of system expansion which will involve capital expenditures of $154,000,000 for new power facilities over the next five or six years, the Gorge project was authorized by the Board last year. A relatively small amount of money has since been spent for surveys, trails, roads, and exploration of the site prior to heavy construction. Estimated expenditures to complete the project is $40,000,000.

Competition for Community Center Design

A PRIZE competition for the design of a memorial community center for a hypothetical town in the Middle West is announced jointly by the Museum of Modern Art, 11 West 53rd St., New York, and *Architectural Record*.

The aim of the competition is to discover and encourage latent architectural talent. To that end architects whose work has been published heretofore in national magazines are not eligible to compete.

The program of requirements may be obtained from the Museum at the above address. The competition will close on November 8. Professional advisers are Philip C. Johnson, consultant to the Museum's Department of Architecture, and Kenneth W. Stowell, editor-in-chief of *Architectural Record*.

THE WATER'S FINE!

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Long a recognized leader in the design, engineering and manufacture of hydraulic and mechanical equipment, Worthington can give you sound advice on the most effective methods of correlating water conditioning equipment for an efficient, economic swimming pool project.

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In addition, Worthington offers *complete* water conditioning equipment — an extremely important advantage that enables you to place undivided responsibility in a single manufacturer. This and the expert personnel, vast manufacturing facilities and unexcelled experience with so many types of water-handling problems, are added assurance that *there's more worth in Worthington.* Write for Bulletin WP 1099-B56. *Worthington Pump and Machinery Corporation, Steam Power Division, Harrison, N. J.* J8-1

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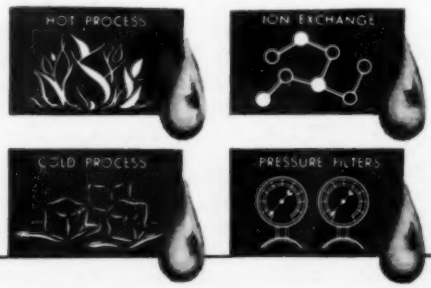


Do You Want a Successful Purchasing Department?

By MAURICE G. POSTLEY*
and
ALBERT PLEYDELL
Survey Institute, Inc.
New York, N. Y.

COMMUNITIES with a population of 10,000 to 50,000 which set up a central purchasing department will find that the agency will not function much better than the law permits it to. If, on the other hand, the purchasing agent himself is not a specialist, or if his subordinates are not geared for the job, the city's buying cannot be efficient, no matter how streamlined it may seem on paper, in the form of ordinances or rules and regulations. The two elements go hand in hand. Basic legal controls must be adequate to protect the taxpayers' interests and the public buyer must be competent to do his job.

A clear grasp of the basic principles of public purchasing will shed light on what the laws should and should not say and what the purchasing agent should and should not be. These fundamentals include:

1. *Systems for agency requisitioning* that give the purchasing agent the best opportunities to bulk requirements and go into the market for his needs at the most propitious time.

2. *Specifications* that are clear and practical, and that provide the widest opportunity for bidder competition.

3. *Purchasing procedures* that give the greatest number of vendors an opportunity to bid.

4. *Rules governing awards* that win the confidence of bidders on the logic as well as the integrity of the purchasing agency.

5. *Machinery* that assures prompt decision on awards, prompt orders and prompt payment.

6. *Inspection and testing methods* that assure all bidders that the successful bidder has been subjected to the same requirements as the unsuccessful bidders.

The public purchasing agency must be able to operate in the open, where everyone can see what it is doing and why it proceeds as it does. Business organizations are taxpayers, and they have every right to know what their purchasing agency is doing. Confident of its motives and methods, vendors will compete for the city's business. Whether in a large city or a small one, a purchasing agency that does not seek competitive bidding by all means at its disposal, and that seems to be favoring some vendors because of failure to make known how it operates, cannot succeed in stretching the taxpayers' dollar.

The purchasing agent must be aggressive in his search for sources, even in the smaller cities. There is a curious benefit that grows from wider and wider competition. While a narrow group who enjoy monopoly may at first resent efforts to secure competition, businessmen generally will applaud it. Time and again, it has been shown that reputable business organizations will understand if they do not happen to be the successful bidder, providing that they are convinced that the pattern of competition is sedulously followed and that the final decision on awards is factual and sincere.

The basic law, whether in a charter or an ordinance, should be clearly stated and widely disseminated. The rules governing operation of the agency, again, should be lucid and available to everyone who does business with the agency. Requisitioning agencies for which the purchasing agent buys should be familiar with his methods. Public opening of bids should be just that: they should be formally opened under circumstances that warrant the respect of businessmen for the way their city does business.

Bureau or division chiefs too often fail to cooperate with the purchasing agent because they do not recognize that he is their ally, not a person trying to seize their powers. The purchasing agent, especially in smaller municipalities, should utilize the collective talents of the government. The using agency can aid in preparing specifications; inspection can often be effectively attained through use of city chemists or engineers; the city attorney aids with contract forms, the city comptroller with simplification of methods of payment.

There are certain liabilities of the public-purchasing process that must be acknowledged. Because it is a public activity, it must, even on minor purchases, have some degree of formality. Watch out that it is not laden with red tape. Informal or open-market purchases may be efficiently and simply made, but they must be clearly recorded. This is an "inside job," nothing to bother the vendors. Here are some questions that may serve as a guide to sound local purchasing:

Do using agencies cooperate in preparing statements of their needs in the form of requisitions?

Are specifications used wherever practicable?

Is there a system of testing or inspection?

Are invitations to bid and advertisements to bid circulated as widely as possible?

Are bids publicly opened and awards publicly made?

Are payments made promptly?

* Maurice G. Postley is also a public relations consultant, with offices at 150 Broadway, New York 7, N. Y. He was formerly Superintendent of School Supplies of the Board of Education of the City of New York. Albert Pleydell was formerly Commissioner of Purchase of the City of New York. Both are honorary presidents of the National Institute of Governmental Purchasing.

New Planning Course At University of Oklahoma

A PROGRAM and curriculum leading to the master's degree in regional and city planning is beginning at the Graduate College of the University of Oklahoma, in Norman, this fall. Students completing the requirements for this degree should be equipped for technical positions in city, state, regional, and national planning organizations and in an administrative capacity in chambers of commerce and other civic and regional organizations whose purpose it is to promote community development, according to the University.

Students enrolled in the program will have the opportunity to acquire training in research in regional and community problems and to take part in the work of the Institute of Community Development, organized in 1945 to help state and local agencies with their planning problems. Although the Institute has no administrative relationship with the new program, there will be close cooperation between them.

Leonard M. Logan, Professor of Sociology, and director of the Institute of Community Development, is serving as coordinator of the regional and city planning program. Admission information can be obtained from the Bulletin of the Graduate College or the University of Oklahoma Bulletin.

Engineering Facts about

Johns-Manville TRANSITE PRESSURE PIPE

The Inyokern Earthquake

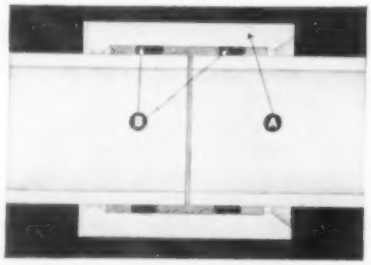
WATER LINES are seldom required to withstand a test as severe as that to which a Transite* asbestos-cement Pipe installation was subjected at Inyokern, California, about two years ago. The Transite installation at Inyokern consists of over 300,000 feet of pipe and comprises the major portion of the water supply system for the vast Naval Ordnance Test Station located there.

During the early part of 1946, an earthquake of maximum intensity occurred in the Inyokern area. Shocks of great severity were felt throughout the immediate locality in which the Transite line was laid. Naturally, concern was felt at the Naval establishment for the safety of its water supply.

After the quake had subsided, crews were dispatched to repair whatever damage the lines might have suffered. A thorough search failed to reveal a single break or any evidence of leakage at any one of the 25,000 joints in the system. Subsequent careful check of pressures and measurement of water levels confirmed that the lines had remained intact.

This aerial view shows a portion of the Naval Ordnance Test Station at Inyokern, California.

The reason this Transite installation was able to withstand this severe test is found in the inherent strength of the pipe and in the design of its Simplex Coupling, the standard coupling for Transite Pressure Pipe. Each of these couplings is a tight yet flexible link connecting one section of pipe to another and imparting to the line as a whole a degree of flexibility which enables it to "roll with the punch." Thus, shocks and vibrations are absorbed, stresses minimized to an unusual degree.



This cutaway sketch shows construction of the Simplex Coupling used with Transite Pressure Pipe. It consists of Transite sleeve "A" and two rubber rings "B" which are tightly compressed between sleeve and pipe as the coupling is assembled.

A factory-made joint which requires only assembly on the job, the Simplex Coupling derives its flexibility from its simple design. Consisting of a Transite sleeve and two rubber rings tightly compressed between pipe and sleeve, its simplicity and ease of assembly are apparent from the accompanying illustration. Moreover, this coupling is readily checked for proper assembly as the line is laid—further assurance of tightness in each individual joint and in the line as a whole.

Probably your water lines will never be called upon to absorb punishment as severe as the Transite lines at Inyokern. But the same engineering advances which protected this Transite installation can be depended on to safeguard equally well against the stresses normally encountered in water line service.

For further information about Transite Pressure Pipe, write Johns-Manville, Box 290, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

*Transite is a registered Johns-Manville Trade Mark

New Service Building Centralizes All Public-Works Activities

LAST Spring the Borough of Essex Fells, N. J., dedicated its most recent civic improvement, which had transformed an eyesore into a real municipal improvement. The improvement was a $65,000 Service Building erected on the site of an abandoned cement-block factory. The building was designed by James Timpson, Essex Fells architect.

The Service Building brings together those public-works activities that formerly had been scattered all over the community. Borough Engineer E. Arthur Bell now has a unified headquarters for his duties of directing water supply, sewage treatment, street construction, street cleaning, and snow removal.

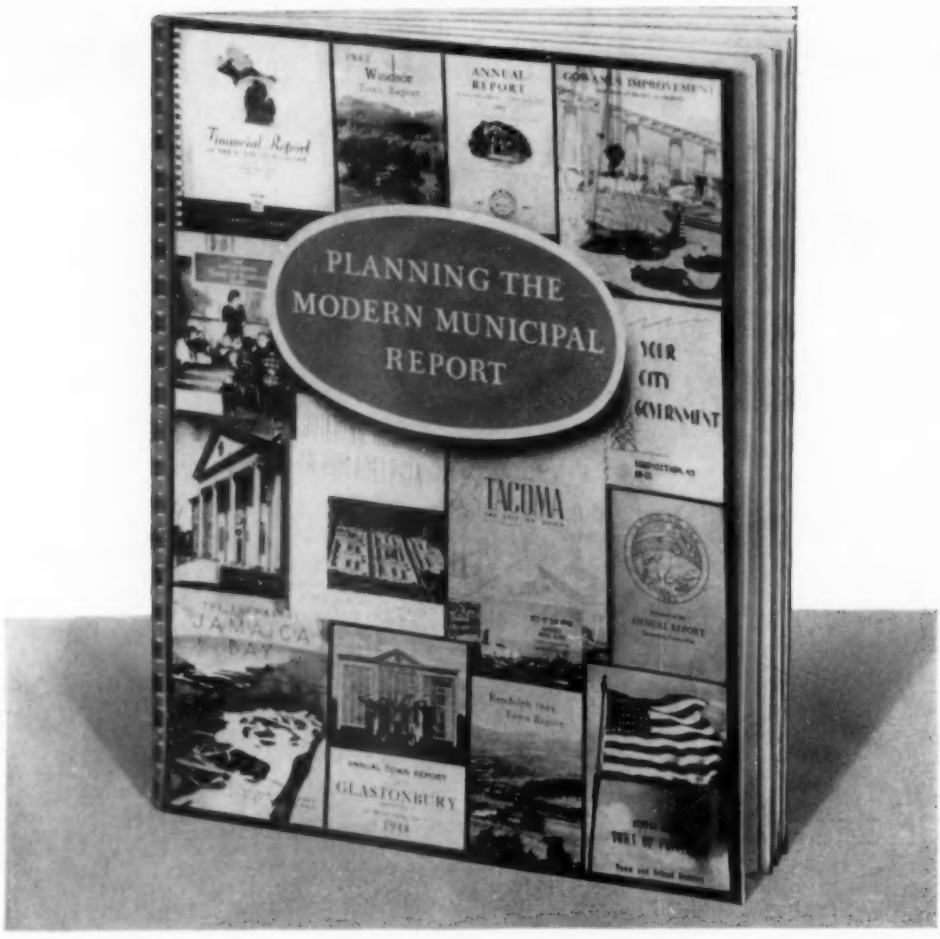
The new building, constructed along the lines of an English country residence, supplies space for eight cars. It has a lift room for heavy trucks, with a lift strong enough to raise a loaded fire truck, a FWD truck loaded with cinders, or other heavy-duty trucks with plows attached. This makes it possible to remove tire chains, tighten plow bolts, and do other tasks on the truck with a minimum of inconvenience.

To care for the needs of the water department, the building has a large repair shop and stock room. In it are meter-testing equipment and valves, fittings, power, and other equipment. On this same floor is a lunchroom for the workmen, especially useful during emergencies when the work requires that they stay on the job all night. It also has a locker room with a shower.

The second floor houses a large meeting room useful for general civic purposes. It is equipped with a complete kitchen so that dinners can be held here if desired. Here also is Borough Engineer's Bell's office, large enough for both desk and drafting-room space.

This is the floor plan of the building.

Looking like a handsome English country house, this service building turned a community eyesore into a civic asset.



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"River, Stay 'Way..."

North Little Rock, Ark., stops a dangerous flood threat by jointly financed government-city project

WHEN the spring rains sent the Arkansas River almost to the top of its north bank at North Little Rock, Ark. in 1944, a number of residents grew alarmed over their own safety. Reports of the U. S. Engineers since 1944 showed that sections of the bank were steadily crumbling and disappearing.

The people were told that if the bank gave way, there was a possibility that the river would make a new channel and flow through the center of the business district.

City Has Six-Mile Shoreline

North Little Rock, with a population of 23,000 in the 1940 census, sprawls along the river's edge for about six miles. Large residential and business areas run the risk of flooding when the spring rains send the river to a high level.

Today about a mile of shoreline constituting the weakest area has been strengthened, and the city can feel more secure.

A $269,000 revetment project was completed early this spring, with work done under the supervision of the U. S. Engineers.

It was in April 1947 when the residents took positive action toward solving the problem. The City Council asked for details and Mayor Eldor Johnson consulted Colonel Gerald Galloway, Chief, Little Rock District, Corps of Engineers. Plans for the revetment were drawn up and costs determined.

Late last summer, the project was approved by Washington officials, who required the city to put up $25,000 before an appropriation of $244,000 was made available.

Local Chamber Raises Money

The work of getting together the sum of $25,000 was carried out by a 10-member committee from the Chamber of Commerce appointed by the mayor. First, the workers made up a list of businesses which were directly threatened by the river. This list included many downtown merchants who remembered the devastation caused by the flood of 1927.

Mayor Johnson's committee visited officials of the utility companies and the railroad and presented them with the facts. They were rewarded with several donations of $1,000 each. His 10 assistants, all well-known men of various professions, pounded the pavements in visits to other businessmen. Each organization visited had been assessed with a certain sum, according to their business and property investments. With few exceptions, says the Mayor, the firms paid promptly and fully the sum assessed them.

Bids of the revetment project were opened in September of last year, and actual work on the river began the following month. The bank was smoothed off and the heavy gravel was laid on the shore above the normal water line. Heavy "mattresses" made of dimension lumber (sufficient willow was not obtainable) were constructed, and weighed down with boulders to make them rest on the river bed and on the bank beneath the water. It is these mattresses that prevent further undermining of the bank. Work of completing the improvements to more than 6,000 feet of shoreline required less than six months.

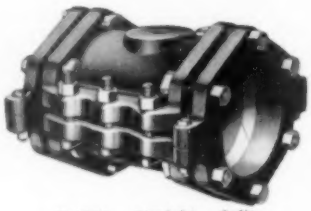
Inspecting the finished revetment project on the Arkansas River at North Little Rock are, left to right, L. L. Sanders, contractor for the project, Cape Girardeau, Mo.; R. I. Blair, of the U. S. Engineers; K. LeFever, Engineer for North Little Rock; William Roe, Superintendent of the Department of Streets; Robert Hall, manager of the Chamber of Commerce; F. W. Ireland, of the United States Engineers, and Mayor E. Johnson, of North Little Rock.

Pollution Believed Cause of "Blue Baby" Disease

CYANOSIS, or the "blue baby disease," has been connected with pollution in well water, according to reports by the Michigan Department of Health. The disease, apparently limited to children under six months of age, occurs when nitrates in water, caused by decaying human and animal refuse, are changed in the baby's intestinal tract to nitrates which combine with the red blood cells to change the color of the blood and reduce its ability to carry oxygen to the body tissues. The blood becomes brown and the skin takes on a greyish-blue cast.

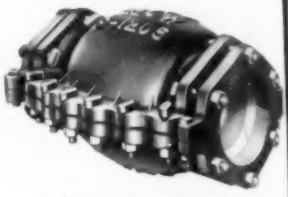
In nine Michigan wells involved with this disease, the nitrate content varied between 243 and 875. Medical authorities recommend a nitrate content no higher than 10 or at the greatest, 20 ppm. No public water supplies were involved.

DID I TELL YOU ABOUT...



F-1200 Straight Split Sleeve. For repair of break up to 8 inches in barrel of pipe.

Clow Mechanical Joint Split Sleeves for Repairing Mains & Reinforcing Joints

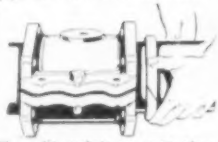


F-1205—Bell Split Sleeve For repairing break through joint, or for reinforcing Joints wherever advisable.

1

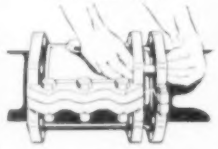
With the side rubber gaskets in the grooves in the face of the side flanges of the bottom half of sleeve, place the two halves around the pipe and bolt together loosely.

2



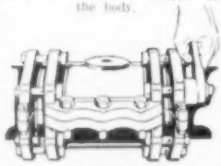
The split gaskets are next placed around the pipe at each end, and pushed to their seat inside the sleeve body. All body bolts are then made tight.

3



The split glands are next bolted together around the pipe—one at each end of sleeve—and then bolted loosely to the end flanges on the body.

4



By ratchet or box wrench, gland bolts are tightened a little at a time—moving from one to another in order to apply gland pressure evenly on the end gaskets.

Because of its great simplicity, Maintenance Men welcome the F-1200 CLOW SPLIT SLEEVE for quick and positive repair of breaks in pipe barrel, and the F-1205 BELL SPLIT SLEEVE for breaks too long for the F-1200, or for repair of reinforcing Joints. With only one tool—a ratchet or box wrench—an average workman can apply these Sleeves and make a permanent repair. This is invaluable in an emergency. No jute, no lead, and no calking necessary. A definite time-saving device for maintenance crews. And always—THEY STAY PUT.

Following soon after the first few sales of the Clow F-1205 Bell Split Sleeves, came word from the field of its manifold utility. Designed especially as an emergency repair Fitting for repairing a break in the Joint of underground Water Piping, Water Works men found it equally effective for repairing a break in the barrel of the pipe in the absence of a F-1200. Another important use for the Bell Split Sleeve is its application as reinforcement for cast iron pipe joints where underground piping is laid under Railroad tracks, Highway Truck Routes, or Submerged pipe lines across rivers, streams and other similar places where piping is difficult of access. This Bell Split Sleeve is always a valuable precaution around joints—consider its added protection.

CLOW SPLIT SLEEVES can be installed in a wet trench and even under water. This is a big advantage because it does away with the dangers of molten lead splash when it hits water. The heavy rubber gaskets used are confined to the joint space. This gives a tight, leak-proof, long-enduring job.

DESCRIPTION:—CLOW SPLIT SLEEVES consist of a body section, in two halves, with bolts through the flanges on each side; two moulded rubber gaskets for side flanges; two moulded rubber end gaskets split crosswise for placing around pipe; two split glands with joining bolts; and the necessary number of tee head bolts for connecting the glands to the end flanges on the body section.

Made in sizes 3-inch to 16-inch inclusive for use on A.W.W.A. Sand Cast pipe and Federal Spec. WW - P - 421 centrifugally cast pipe.

BE PREPARED. Order a reasonable reserve of Clow Split Sleeve F-1200 and F-1205 in sizes to match the piping sizes in your water distributing system. Sleeves are shipped complete and ready for instant use. Complete instructions for installation accompany each Sleeve.

You are invited to fully acquaint yourself with these Clow Mechanical Joint Split Sleeves and other current Clow developments. Write today for completely descriptive literature. No obligation.

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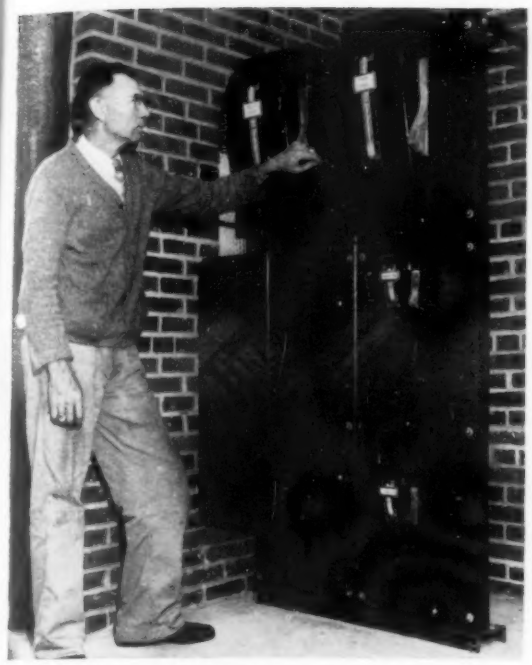
Salisbury, Md., installs new well pump with a unique cut-off arrangement that protects against draw-down below the suction pipe

A Mercury Cutoff



Here is Kendall Mumford, Plant Engineer, operating a control of the Salisbury water-pumping station.

ONE phase of pump trouble is virtually eliminated in the new pumping station recently constructed at Salisbury, Md. City Engineer Clarke Gardner has, by careful engineering, removed the possibility of "burning up" a pump because of excessive draw-down. He also has built other important features into his new station. But this protection against excessive draw-down is important in the Salisbury area, where water supplies are on a touch-and-go basis.

Salisbury's water department serves a population of 15,000. At present the supply comes from five 16-inch i.d. concrete wells and three 12-inch-by-24-inch gravel-wall wells. The department distributes the water through a network of mains 52½ miles long which vary in diameter from 6 to 20 inches. The system uses 3,725 service connections. It contains one 550,000-gallon reservoir, two elevated tanks of 550,000-gallon capacity, and one standpipe holding 80,000 gallons. The maximum output from the reservoir to the distribution system is 5,000 gpm. All water is treated for carbon dioxide reduction and pH correction. The supply is disinfected by chloramine treatment, utilizing a ratio of three parts of chlorine to one part of ammonia.

As is to be expected, the use of water runs rather high when only 10% of the services is metered. During the period from January through April the average figures varied from 114 to 118 gallons per capita daily. From May through July the figures rise to 142 to 173 gallons. August figures averaged 253; from September through December, they varied from 116 to 175 gallons.

To meet the heavy water demands, particularly from seasonal industries, the city recently completed a 12-inch-by-24-inch gravel-wall well driven to a depth of 66 feet. This well, yielding 1,000 gpm, is housed in a brick pumphouse approximately 14 by 14 feet. A Peerless 800-gpm turbine pump serves the well. The pump operates through Allen-Bradley remote control equipment by a push-button station connected to a reduced voltage starter from the main pumping station placed some 1,700 feet away. The electrical panel board is from Harry M. Wood & Co.

Corrosion Control Measure

Because of corrosive conditions in the water—containing 25 ppm of carbon dioxide—City Engineer Gardner specified that the pump shaft, impellers, column, and bowls were to be made of special corrosion-resistant materials. He decided that the pump shaft was to be made of Monel metal, the impellers of bronze, and that the column and bowls were to be composed of wrought iron with a strainer of brass.

The automatic cutoff feature of the pump operation developed out of its use against a low reservoir head. The device consists of a mercury tube attached to the Darling Valve check valve on the discharge side of the turbine pump. If, for any reason, the draw-down should go below the bottom of the suction pipe, the water stored in the reservoir would be at such height that it would permit the back-flow of water to the turbine pump. This mechanically flips the check valve, and this in turn tilts the mercury tube, thus cutting off the motor, preventing the pump from "burning."

The future needs for water have been studied carefully by Engineer Gardner. Over the past 10 years, he has concentrated his attention on the dry-weather flow at Schumaker's Dam. This body of water is located approximately two miles southeast of the present main pumping station. The U. S. Geological Survey has maintained an automatic gauging station at the point which records the flow of water daily, which, at present, discharges into a small stream flowing into the Wicomico River, a tributary to Chesapeake Bay.

Step Dams Studied

Studies on utilizing the supply at Schumaker's Dam have indicated that it is possible to construct a series of "step-dams" between it and the pumping station. The contour of the area is ideal. It would, of course, be necessary to convey this water from the last dam through the medium of a 36-inch cast iron pipeline by gravity to the main pumping station, at which point filtration, coagulation, and chemical treatment would be required for conditioning the supply.

The development of water from Schumaker's Dam will run into an estimated $250,000, while an additional well, pumping equipment, and conveying pipelines may vary from $25,000 to $50,000.

The pumping station is housed here.

This town GOT the gravy!

A new plant . . . 350 new jobs!

An industrial company selected *this town* for its new plant over all other cities in the area. Why? It had the one manufacturing essential . . . soft water!

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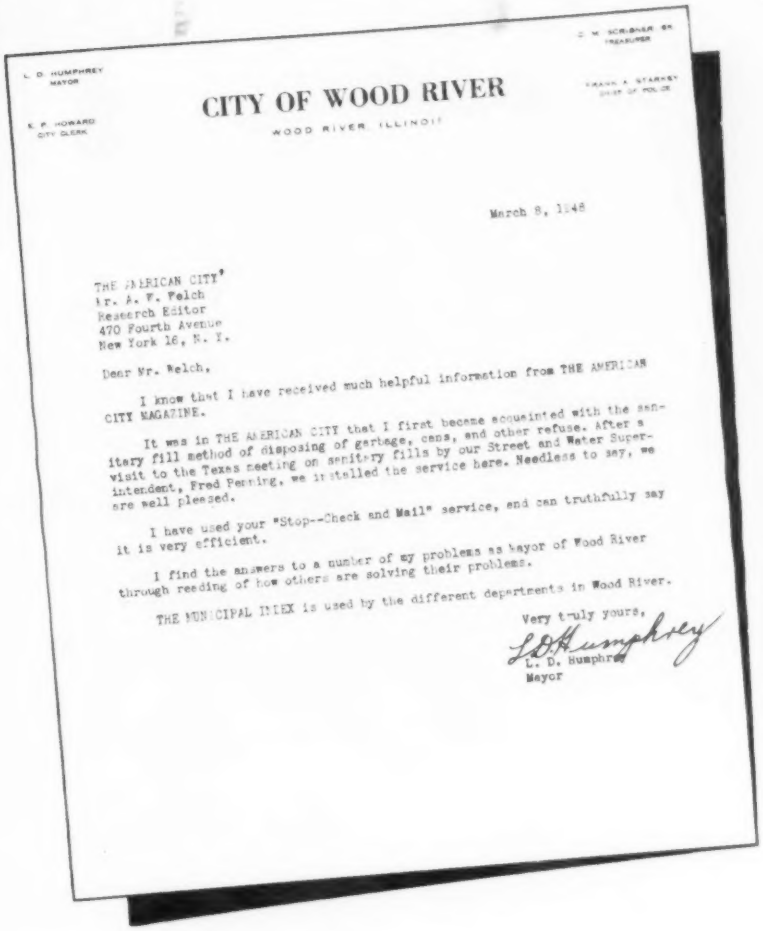
Permutit

WATER CONDITIONING HEADQUARTERS FOR 35 YEARS

The Mayor of Wood River

PHOTO COURTESY OF SHELL OIL CO., INC.

Lavier D. Humphrey, the mayor of Wood River, Ill., talking to a member of the Wood River Police Department.



L. D. HUMPHREY
MAYOR

E. P. HOWARD
CITY CLERK

CITY OF WOOD RIVER
WOOD RIVER, ILLINOIS

C. M. SCHLOSSER SR.
TREASURER

FRANK A. STARKEY
CHIEF OF POLICE

March 8, 1948

THE AMERICAN CITY
Mr. A. F. Welch
Research Editor
470 Fourth Avenue
New York 16, N. Y.

Dear Mr. Welch,

I know that I have received much helpful information from THE AMERICAN CITY MAGAZINE.

It was in THE AMERICAN CITY that I first became acquainted with the sanitary fill method of disposing of garbage, cans, and other refuse. After a visit to the Texas meeting on sanitary fills by our Street and Water Superintendent, Fred Penning, we installed the service here. Needless to say, we are well pleased.

I have used your "Stop--Check and Mail" service, and can truthfully say it is very efficient.

I find the answers to a number of my problems as mayor of Wood River through reading of how others are solving their problems.

THE MUNICIPAL INDEX is used by the different departments in Wood River.

Very truly yours,
L. D. Humphrey
Mayor

LAVIER D. HUMPHREY is a politician who knows how to roll up his sleeves and get his hands dirty. Besides being mayor of Wood River, Ill., he is an operator in the lube-oil plant of Shell Oil Company's Wood River refinery in neighboring Roxana.

Humphrey was elected mayor in 1945 in a three-cornered race in which he defeated his closest rival by 70 votes. He had never before held public office.

He has worked for Shell since 1933, starting as a laborer and eventually becoming an operator in the lubricating plant. Like many of the refinery's 3,500 employees, he works alternating shifts from 8 to 4, 4 to 12, and 12 to 8, changing shifts every week.

Sometimes city business and the demands of his regular job make Humphrey extend himself to take care of both. On such occasions, Shell helps as much as possible, since it has long had a policy of encouraging employees to participate in civic activities.

Campaigned for Recreation

Humphrey built his campaign for office around a promise to provide suitable recreation facilities for Wood River youngsters. Once Mayor, he vigorously pushed such a program, securing tax funds to support supervised playgrounds for children of all ages. His newest project is a 15-acre ball park and amusement center north of town.

His proudest achievement is not connected with his regular mayoral duties. Back on Halloween of 1944, the city's youngsters had themselves a time — damaging municipal property to the tune of better than $500. Humphrey determined to teach them respect for the law by winning their cooperation. Enlisting the aid of Police Chief Frank Starkey, he formed a Junior G-Man Club. At monthly meetings, besides witnessing entertainment programs, adolescents were addressed by police and civic leaders and F.B.I. representatives. They were shown the town jail and familiarized with local laws. Club membership is now over 200, and last year's Halloween damage amounted to less than $25.

The Mayor and the Chief of Police support the organization out of their own pockets and say they feel themselves well paid. They have had calls from towns all over Illinois asking how they can establish similar groups.

The secret of Humphrey's success in handling two man-size jobs and finding time to worry about everybody's kids as well as his own lies in the fact that he's in love with life. "I like to be doing things," he says. Even in the rare moments when he loafs, he works at it, according to his wife.

He talks proudly of the hospital planned for Wood River Township, the airport proposed for the locality, and the new rubbish-collection system installed in town. About that rubbish system, read his letter above.

Tallamy Succeeds Sells As Superintendent Of Public Works

ON September 3, Governor Thomas E. Dewey announced the resignation of Charles H. Sells as New York State Superintendent of Public Works. Bertram D. Tallamy, of Buffalo, N. Y., succeeds him.

After work as party chief Mr. Tallamy organized, in 1930, with two associates, an engineering firm, which has designed and supervised the construction of housing projects, sewage-treatment plants, and water works, dams, bridges, and highways. Five years later, continuing work with his own firm, Mr. Tallamy became associated with the Niagara Frontier Planning board and two years later became its chief engineer. In 1945, resigning from both his government and private enterprises, he became deputy superintendent of public works.

EVEN HARD-FROZEN ICE WON'T BALK A NELSON SNOW LOADER

Nelson 10-yard-per-minute snow loader owned by the Port of New York Authority. This *complete unit* is well within the budget of even small communities.

YEAR 'ROUND USEFULNESS — A Nelson is a full-time worker. Extra boom quickly converts it into efficient bucket loader.

. . . IT PICKS BEFORE IT SHOVELS!

Ice storms, quick freezes, hardened snowbanks — biggest snow-clearance headaches in most cities—are routine short order jobs for a Nelson Snow Loader. That's because a Nelson is more than a "conveyor-type" machine. *It picks before it shovels.* Tough, steel-toothed, renewable feeder blades dig deep and close, make short work of frozen snow.

A sensitive valve gives operator close control of depth of cut, protects pavement. Operators like the way a Nelson maneuvers in traffic; they like the quick adjustability of the Nelson hydraulic hoist and swivel chute.

The man who pays the bill likes a Nelson's year-'round usefulness. It handles coal or cinders without a change. A Nelson bucket boom, separately available, speedily converts the same chassis into a rugged bucket loader for road or pit, handling sand, earth, gravel or broken stone.

By all means get the facts and costs on the Nelson—and see it perform—before you invest in a snow loader. Thrifty "Utility" or big "Heavy-Duty" sizes. Write for new bulletin.

NELSON

N. P. NELSON IRON WORKS, INC.
CLIFTON, NEW JERSEY · *Truck Loaders Since 1917*

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, JR.

Garage Under Boston Common

MASSACHUSETTS. *Lowell* v. *City of Boston*, 79 North Eastern (2d) 713 (Massachusetts Supreme Court, April 17, 1948).

A plan to build a huge garage under Boston Common, pursuant to statutory authorization passed in 1946, was attacked in the present cases by three taxpayers' suits offering a multiplicity of objections. The opinion was largely devoted to a long and extremely interesting history of Boston Common, with reference to various alleged limitations on the city's title.

The underground garage project was already well on its way. In the statute, after a declaration as to traffic congestion, the city was authorized to contract with a private corporation for the latter to build an underground garage under one corner of the Common, subject to various guarantees to protect the public interest. Under the tentative plans, a three-story reinforced concrete underground garage was to be built to accommodate 3,500 automobiles, with the roof from 4 to 6 feet beneath the surface underneath 13 acres of the Common. Two entrances were to be provided from Charles Street, which separates the Common and the Public Garden, and a through tunnel under the Public Garden was to connect the garage with Commonwealth Avenue. A passenger tunnnel would run to Fremont Street. Apart from the use of the space underground, therefore, the temporary tearing up of one-quarter of the total area and the permanent use of small areas for entranceways would constitute the only disturbances of normal public enjoyment of the Common.

In order to determine the city's power to build the garage, the Court went into a careful examination of the origin of the city's title to the Common. All parties to these suits agreed that most of the present 48-acre Common was acquired in 1634 by purchase from one William Blackstone. According to the taxpayers' arguments—supported in part by the wording of a deposition taken in 1684 as a precaution against the expected attack on land titles by the later Stuart kings—the inhabitants had taken up a collection, acquired the land, and then conveyed it to the town with the condition (either by dedication or by creation of a trust) that the land be used for a military training ground and for pasturing. According to the city's argument, the town had purchased the land directly and unconditionally, and still held it free of any encumbrances. No deed or other positive documentary evidence existed to determine the disputed questions as to the method of raising the money and the original grantees, although the preliminary conveyance may have been made to the inhabitants because of a doubt as to the power of an unincorporated town to take title to land. However, as the Court sensibly recognized, the inhabitants of a frontier settlement, in carrying out a collective undertaking at that time, may not have been particularly careful to preserve a distinction between their private action in taking a collection from everybody and their collective action as citizens of the town. The Court's realistic attitude to the informal character of these early transactions is worth quoting:

> Technical refinements and common law distinctions as to title are not to be given too much weight in determining the origin of the ownership of the Common, depending as they do upon events which occurred more than three centuries ago during the incipient and formative stages of a young settlement striving to organize itself into a permanent political subdivision; and whether the ownership was in the town or in its inhabitants, the latter, in those early days, as owners or freemen, controlled the property, its title and its use.

In reviewing the public transactions relating to the land over the next years, the Court noted that no assertion of individual private rights was ever made, and that its use for military purposes and for pasturing had developed rather slowly. Moreover, considerable public demand for subdivision of the Common resulted in the question being turned over to the Colony's leaders in 1640; and the latter detached a few lots from the Common and decided that the rest should be maintained as a park without further subdivision. In view of these facts, the Court held that the conveyance of the land to the town had not been made subject to any condition prescribing its use. However, the decision in 1640 against subdivision and in favor of a public park was construed as an irrevocable dedication of the land by the city for use as a public park. By this act an easement was created in favor of the public to use the land as a park, and the Court held that that easement was subject to modification by the Legislature.

To complete the historical picture, it should be added that pasturing on the Common continued until about 1830, when, after a period of private use, the adjoining 24-acre Public Garden was also reacquired by the city; and the development of both areas for rest and recreation purposes dates from about that time. In 1908 a Parkman bequest provided $5,000,000 for park maintenance "in the hope and expectation that" the Common would be continued as a public park; but this was held by the Court not to impose a binding obligation on the city.

The section at the end of the opinion upholding the validity of the statute followed the familiar pattern in cases dealing with such public projects. Since the alleviation of traffic congestion is admittedly a proper subject for government action, and since in any case the legislature has power to modify the public's easement for enjoyment of the park, the garage project and the benefits accruing to the garage owners were approved as necessary incidents of the scheme chosen for alleviation of traffic.

Individual Lots Required for Garden Apartment Projects

MARYLAND. *Norwood Heights Improvement Association* v. *Mayor and City Council of Baltimore*, 60 Atlantic (2d) 192 (Maryland Court of Appeals, June 17, 1948).

The opposition to "garden apartments" by more conventional building interests will find available from this case a new device for legal obstruction.

After the Stulman Building Company's first plan for building on a 15-acre tract in Baltimore had been turned down for failure to conform to certain zoning regulations, the company submitted a new plan to build garden apartments on the same tract. Under this proposal 168 apartments were to be arranged in 34 units, which would overlap and partially connect at the corners to form 10 separate buildings;* but no individual lots were marked out on the plans. Common heating plants, water and sewage pipes, and playground and outdoor parking facilities were to be provided for units of various sizes within the project. A single electric meter, single gas meter and single water meter covered the entire project, and it was financed by a single mortgage. The Building Company proposed to operate the project and lease the apartments, and insisted that no part of the project would be sold separately. When the various city departments, the City Plan Commission, and the Board of Municipal and Zoning Appeals approved the application for a building permit under this plan, the Improvement Association took an appeal, larkely on the ground that the zoning regulations required individual lot lines in the plans. The lower Court upheld the Board, but the Maryland Court of Appeals reversed by a vote of 5 to 2.

It is unfortunate that the problems are not really thought through in either the majority opinion or the dissent.

(*Continued on page* 131)

* Over one-third of the area was assigned to streets and open-air parking facilities. The use of the terms "unit," "group," and "building" in the opinion is very difficult to follow, but does not appear to be determinative of the issues.

Best Deal For Long Wearing, Better Looking Uniforms

REEVES ARMY TWILL

The Reeves fabrics in the designs shown were recently publicized in LOOK Magazine. Designs are by Helen Cookman. Patents applied for.

LONG-LASTING economy is "in the cards" when you specify Reeves Army Twill for your industrial uniforms. The high tensile strength of this top-quality fabric assures years of rugged wear.

Reeves Army Twill tailors beautifully—which means better employee appearance, greater comfort. These are important assets towards boosting employee morale and increasing public good will.

Reeves Army Twill comes in a wide range of vat-dyed colors fast to sun, water and perspiration. It withstands repeated washings . . . its residual shrinkage is less than 1%. Remember—over 90 million yards of this same fabric helped equip America's fighting men—exceeded Government specifications under the toughest climatic conditions.

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Moreover, the majority opinion, insisting on the necessity for lines marking individual lots, is none too clear. While admittedly the proposed density per acre was within the limits set by the zoning ordinance, various other requirements in the ordinance—particularly the percentage of the land covered by buildings, and the size of rear and side yards—were phrased in terms of "lots" and "buildings.' The Court concluded from this that " 'lots' and 'buildings' are the units of zoning," and then refused to consider the whole project as a single "building" for purposes of applying these requirements. In this connection brief reference was made to two additional objections. It was feared that, in some other situations, the existence of a wilderness at the rear might furnish the proper percentage to allow row houses in locations where the latter were supposedly prohibited. Moreover, subsequent sales of individual units might result in crazy-quilt remnants and force some type of re-zoning. The majority therefore concluded that the plans must be revised by drawing in individual lot lines for each building.

The dissent, while vigorous enough, failed to provide a really satisfactory alternative rationale. After a rather ambiguous analysis of the ordinance's ambiguous definition of a "lot," the opinion concluded that under its terms a "lot" could be of any size and could contain numerous buildings. As for the fear of confusion from the future sales of parts of the project, it was pointed out that the practical difficulties of subdividing the services provided in common rather minimized the problem, and that in any case drawing artificial lot lines between buildings in common ownership was not likely to affect any actual future subdivision and sale of the land. The dissent then turned to the broader perspective:

> The type of project under consideration was probably not contemplated at the time the ordinance was drafted, and was not dealt with specifically. . . . To hold that the development of every tract must conform to the stereotyped conceptions of the era of the brownstone front, puts an undue premium upon conventional design, and unduly limits architectural conceptions that attempt to meet the modern requirements of off-street parking, playgrounds and service facilities in common. The "garden-type" apartment design, like the university campus, should not be outlawed because it deals with the problem in an unconventional way.

While a large-scale redrafting of zoning ordinances would, of course, be the best solution, the unimaginative majority opinion in this cause does not offer convincing proof that the problem cannot be solved within existing ordinances. While decisions such as this may often seriously cramp freedom of architectural design, in other instances the resulting problem may be met (as actually suggested by the Court here) merely by going at the plans with a pencil and a ruler.

Trailer Camps—Licensing—Zoning

MICHIGAN. *Wyoming Township* v. *Herweyer*, 33 North Western (2nd) 93 Michigan Supreme Court, June 14, 1948).

By two ordinances Wyoming Township provided for licensing and regulation of trailer camps, and forbade parking of an unoccupied house trailer on any site in the township not specially licensed for that purpose, except with a temporary permit. In 1946 a married couple and their child moved into the township and located their trailer on the rented portion of a lot which was not specifically licensed for trailers. In view of the housing shortage and of the overcrowding in local trailer camps, the township board took no action at that time to enforce the ordinance. The two ordinances on trailers were omitted, apparently inadvertently, in a new Township Zoning Ordinance and Building Code passed in May 1947, but were reenacted in July 1947. Shortly after that time the township officials demanded that the couple move their trailer to a camp where space was then available; and when they refused, the township instituted the present action to restrain the couple from continuing to occupy the premises in violation of the ordinance, and to have the regulations declared valid. The defendants claimed a vested right to remain with their trailer on the original premises, partly because of the two-and-a-half-month repeal of the regulations, partly on the ground that the relevant zoning regulations for the Industrial District permitted any use not in conflict with state law. Both the lower Court and the Supreme Court held in favor of the township.

In the opinion the trailer-licensing and the industrial-zone regulations were construed together, with the more specific regulations as to trailers naturally taking precedence. Moreover, the brief unregulated period after the accidental repeal of those regulations was held not to give the defendants any permanent rights. Finally, the validity of the licensing regulations was upheld, on the authority of a long line of Michigan cases. (See end of paragraph.) However, the form of the lower Court decree affirmed here was much too broad, since it purported to uphold the entire new Zoning Ordinance and Building Code as valid against any persons violating any provisions thereof.

This line of authority culminated in *Portage Township* v. *Full Salvation Union*, 318 Michigan 693, 29 North Western (2d) 297, discussed in THE AMERICAN CITY for January 1948.

Restaurant in Residence District —Unnecessary Hardship

RHODE ISLAND. *Caldarone* v. *Zoning Board of Review of City of Warwick*, 60 Atlantic (2d) 158 (Rhode Island Supreme Court, June 18, 1948).

A piece of land near an amusement park at Rocky Point (below Providence) was used for a restaurant and cafe for many years until about 1940, and has been vacant since that time. In 1945 a zoning ordinance placed the area in a residence B zone, where the previous use was forbidden. When petitioner sought to establish another restaurant and cafe on the premises, his application to the Warwick Zoning Board of Review for an exception or a variance presented the above facts and nothing more. In denying the application, the Board stated that existing eating facilities seemed adequate for the area, that traffic congestion was already a serious problem, and that the police had already specifically requested that no further business establishments should be permitted near the park. On appeal to the Courts, petitioner's lawyers proceeded to argue that in such a proceeding the Board had no discretion, and that if it had the unfavorable decision constituted an abuse of discretion.

In holding for the Board, the Rhode Island Court made three points, quickly and bluntly. First, an application for an exception or a variance is necessarily a plea for the exercise of discretion. Second, since no section of the ordinance was cited as the basis for an exception, the case must be handled as a request for a variance. Third, in applying for a variance on the ground of unnecessary hardship, a petitioner has to assume the burden of proof for showing both unnecessary hardship and conformity with the public interest; and none of the evidence presented here could conceivably serve as a basis for a favorable decision on the application.

Garage Expansion in Apartment-House District—Unnecessary Hardship

NEW HAMPSHIRE. *Fortuna* v. *Zoning Board of Adjustment of City of Manchester*, 60 Atlantic (2d) 133 (New Hampshire Supreme Court, July 6, 1948).

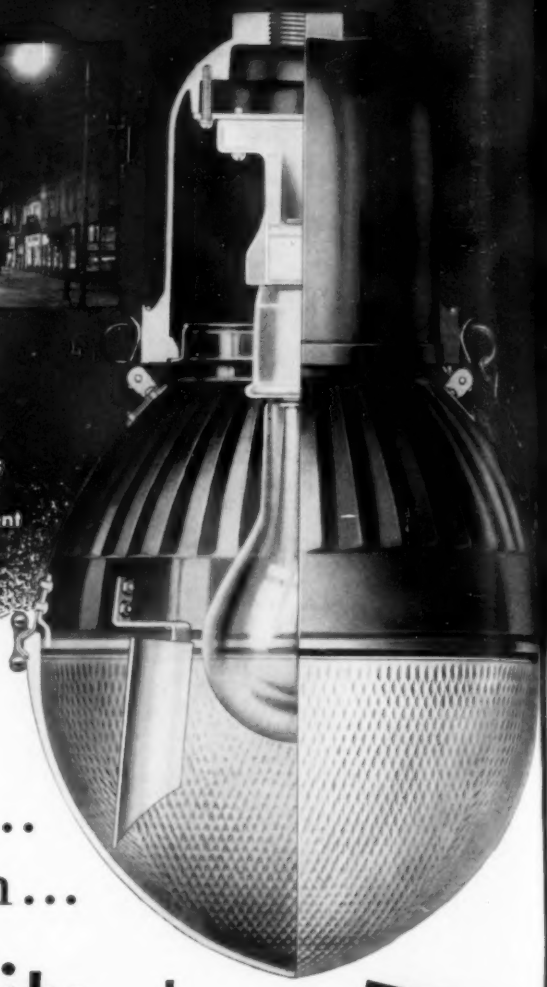
After the Manchester zoning ordinance was passed in 1927, a garage owned by the Manchester Buick Company continued as a non-conforming use in an apartment-house district. When the company sought permission to build an addition to the garage on an adjoining lot, objections were raised by the owner of two apartment houses across the street behind the garage. Since the land for the proposed addition had been acquired subsequent to passage of the ordinance, the addition could not be justified by a section of the ordinance permitting additions on the same lot; but the Board of Adjustment authorized the addition as a variance, on the grounds of unnecessary hardship and conformity with the public interest. On appeal, both the lower and the Supreme Court upheld the Board.

The opinion in the Supreme Court largely confined itself to upholding the findings made by the Master in the lower Court. First, the proposed addition to the garage would not appreciably diminish the value of the objector's property. Second, the addition would in fact be beneficial to the public interest, by helping to alleviate traffic congestion in the neighborhood. It was therefore held that literal enforcement of the ordinance in this situation would create unnecessary hardship. The Court also rejected sharply an argument that, under this type of ordinance, only slight variances could be authorized.

In this decision (from which one judge dissented) the New Hampshire Court expressed a philosophy unusually favorable to approving variances for unnecessary hardship.

Progressive Towns Re-Light for Safety

These "before" and "after" photos show how one eastern city tripled the illumination with L-M Spherolites. Formerly, light on the pavement was .64 lumens per square foot; with Spherolites it is 1.8—and with the same size and number of lamps. Same total wattage—but more efficient utilization of light. And, says the superintendent, there is less breakage, less cleaning, and maintenance costs are substantially lower. Not bad!



Safety goes up... maintenance goes down... with L-M Spherolite

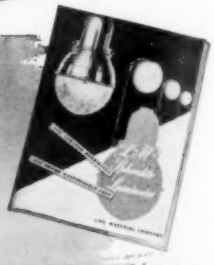
Spherolite luminaires direct a high percentage of the light onto the pavement, spreading the light over a wide area, in a controlled pattern. Here are some Spherolite features:

Versatility: adaptable to all mounting requirements; wide variety of metal hoods, porcelain heads, glassware, holders, deflectors.

Low Maintenance: dust and moisture seals between glass and reflector and hood; easily accessible for relamping. Hoods sealed against dust, moisture insects. L-M fluted reflector by-passes the light around vertical axis of lamp, avoiding heat concentration and assuring full lamp life.

Long life: weather-tight construction maintains reflector efficiency for many years; aluminum and other non-corrosive materials assure long life; heat-barrier hoods prevent cable deterioration.

Engineering Service: need help? ask for an L-M Street Lighting Engineer—trained, experienced men who help you get safe, efficient street lighting to fit your budget.



Want to Know More?

Write for L-M's new Spherolite bulletin. Photometric data, I.E.S. recommendations, and other useful information. Details on Spherolite construction and application, on hoods, glassware, standards, brackets, accessories, and control equipment including L-M "Wired Radio" control. Ask any L-M field engineer or write Line Material Co., Milwaukee 1, Wisconsin.

LINE MATERIAL Street Lighting

L-M DISTRIBUTION EQUIPMENT INCLUDES: Distribution Transformers • Fuse Cutouts and Fuse Links • Lightning Arresters • Oil Switches • Pole Line Hardware • Line Construction Specialties • Underground Equipment • Fibre Conduit • Street and Airport Lighting Equipment • "Wired Radio" Control Equipment • Capacitors

Outdoor Lighting

Lighting Can Be Beautiful

By **L. W. GRAYSON**, *Superintendent*
Department of Public Utilities
Riverside, Calif.

KEEPING safety a step ahead of hazards has been one of the major objectives in the modern street-lighting program for two of Riverside's main streets.

Replacement consists of the removal of 87 old three-light units of 260 watts each and 53 single-light units of 60 watts each. The old standards were of the original Lorraine Cross design. These were replaced by 102 Pacific Union Metal Marbelite standards complete with 8-foot mast arms and Westinghouse mercury-vapor luminaires using 250-watt lamps.

Riverside, the city of beautiful trees, creates the problem sometimes encountered in street lighting of a variety of trees necessitating extended mast arms.

The old standards, being very short, were below the general tree level and the new standards, to provide a 25-foot mounting height, place the luminaire at the level of greatest diameter of many of the trees.

The night effect of this lighting is of special interest, with the shading of the trees in a soft blue-green, typical mercury light to project a pleasing sight to the traveler as he passes along the street.

The day effect of the Marbelite standard blends in with the variety of architecture of adjacent buildings, standing straight as though a part of the buildings in the original design.

One of the Mission-type concrete standards that is being replaced. Two of these standards are shown lighted in the foreground of the night picture.

Choice of mercury-vapor lights came after an extended study of mercury and incandescent lighting, a look at the Pennsylvania Turnpike lighting, and a trip to Cleveland to view the first two side-mount mercury-vapor units completed.

The standard to be used in this replacement was selected after the installation of two types chosen for having proper engineering design and placed for appearance study. The spacing of the standards in staggered pattern at 165-foot spacing provides posts at 82-foot intervals along the street.

With the old system, almost all the useful light was immediately under the posts. Under the new lighting, readings as taken along traffic lanes vary from a minimum of 0.34 foot-candle to a maximum of 1.23 foot-candles at the center line of the street, to a maximum of 2.15 foot-candles in the near lane directly under the light.

The over-all improvement increases the electric load by only 7 kw and increases lighting intensity three times.

Installing a new 25-foot Pacific Union Metal Marbelite standard with a Murray demountable Crowsnest on a ¾-ton Chevrolet pick-up.

New mercury-vapor lighting on Seventh Street with its trees bathed "in the soft blue of the mercury illumination."

Safe Street Lighting Pays

—IN CANCELLED ACCIDENTS

YOU CAN BE SURE
IF IT'S Westinghouse

The cost of traffic accidents is the largest item in street maintenance. The economic waste from automobile accidents in this country exceeds $1,250,000,000 annually . . . and 60% of the traffic fatalities occur at night.

How can we handcuff America's No. 1 public killer and cancel a large percentage of these accidents? The answer is *planned street and highway lighting.* It is estimated that for $2.40 per capita an adequate Traffic Safety Lighting Program can be inaugurated.

Call your local Westinghouse Distributor for information about street lighting. *A Westinghouse Sales Engineer will gladly co-operate with you, your local utility and electrical contractor in the development of a plan.* J-04205-A

COMMERCIAL • INDUSTRIAL • FLOOD • STREET • AVIATION

Westinghouse Planned Lighting *Pays*

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Best Yardstick for Safer Streets at Night

By PRESTON S. MILLAR

IT MUST be expected that in the United States there will be 35,000 to 40,000 fatalities from traffic accidents during the coming year. An outstanding aspect of the traffic accident record is the relatively large number of accidents occurring at night, despite traffic being less dense at that time. The largest factor is the inferior visibility afforded users of streets and highways. Varied and, upon the whole, rather extensive studies that have been published indicate that there is an annual loss of about 10,000 lives in the United States attributable to inferiority of visibility at night.

When the automobile ceased being a novelty and found its way into the business and recreational practices of the nation, the night use of public ways started its steady expansion. The time had come for serious review of the whole subject of street lighting.

First IES Code in 1928

Early in the 1920's, a committee of the Illuminating Engineering Society undertook the preparation of a code which would provide adequate illumination on streets after darkness. The committee which developed the first "Principles of Street Lighting" in 1928 was drawn from universities, consulting engineers, governmental agencies, laboratories, manufacturers, and electricity supply companies. It has continued to function and since then has issued five editions. The latest one, "Recommended Practice of Street and Highway Lighting," was published in 1945 and brings the committee's experience and study up to date. It was approved by the American Standards Association in 1947 under the Existing Standards Method, which certifies that it has been accepted by all national groups that are concerned with highway safety and street lighting. The IES is now proprietary sponsor of the project.

Since the first codes were published, the increased manufacture and use of automobiles and trucks have outdated their lighting recommendations. Not only are automotive vehicles more numerous today, but they are faster, and traffic has quickened to accommodate them. The rules and regulations that govern the motorist have also kept pace but, sadly, fixed lighting installations have generally proved inadequate for the increased volume of traffic they must serve.

Changes in the new standard are based on modern improvements in equipment and the increase in the speed and density of traffic. Electrical research is continually bringing forth new methods and new equipment which can be applied practically and economically in lighting streets and highways. Studies in prismatic action and scientifically devised deflectors in lamps, for example, constitute an exciting challenge to manufacturers to produce luminaires which make obsolete the equipment of even twenty years ago.

Streets and intersections which are poorly lighted take their nightly toll at a cost which might well have been spent in providing for good visibility. In surveys made of areas that had raised their illumination values, the resulting drop in the accident and fatality rate after darkness was conclusive. Increase in illumination brought about a direct decrease in night traffic accidents up to a point where the night accidents began to run parallel to the daytime rate. This point, at which the minimum accident rate was reached, formed the basis for the figures adopted in the 1945 edition of the standard for street and highway lighting. The new illumination values represent an increase since the last edition.

Proper illumination depends on many other variable factors, however, and all these are also given consideration. Before any specific lighting problem may be solved, the density of traffic on the particular roadway must be determined, the accident experience there studied, the types and speed of the vehicles which use it evaluated. The width of the street or the number of traffic lanes, the character of the pavement surface, the grades and curves, and all the special roadway construction features are vital points which must be weighed before the proper illumination may be prescribed.

Several new factors affecting illumination values have also been introduced into the latest edition. Since exposure to accidents increases as traffic volume increases, a good lighting system must be built up from a definite plan based on a comprehensive traffic survey of the roadway under consideration. The pedestrian traffic on streets has therefore been analyzed as an element in this classification. A table recommending illumination requirements for urban streets is based on the classification of pedestrian traffic as heavy, medium, and light, and the relation of these classifications to vehicular traffic classification.

For the first time, too, typical patterns of light distribution have been introduced in the standard. Five typical candlepower distribution types of luminaire, four of them giving asymmetric distribution, are described. Equipment has been developed which now enables lighting engineers to provide illumination which will fit the contour of the street where that is desired. The new shapes of luminaires can also control glare better than had been possible in the past.

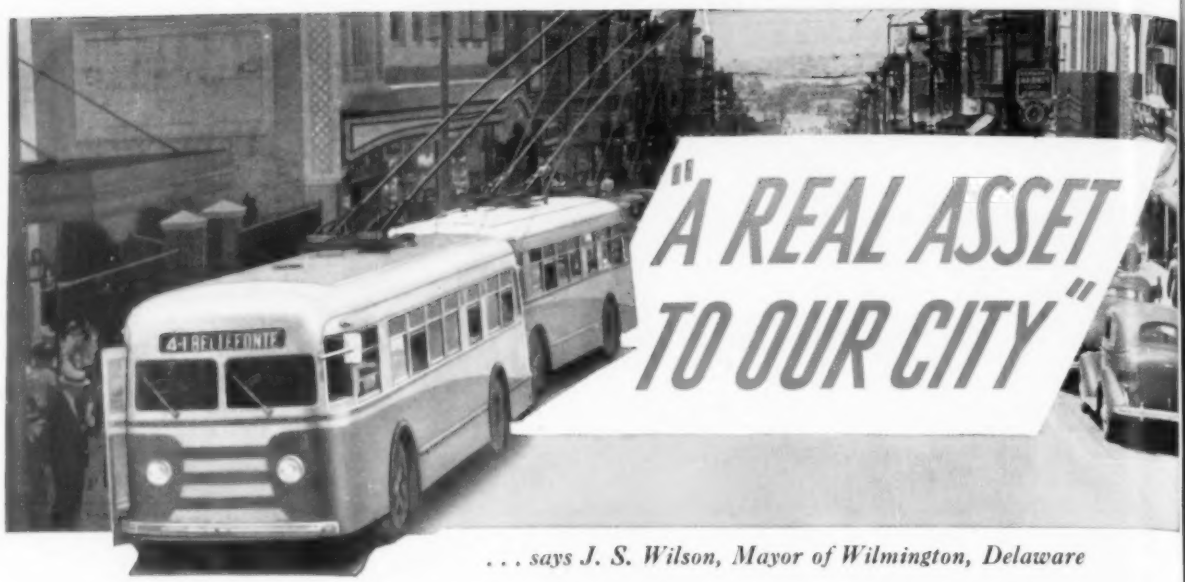
To Minimize Glare

Glare, one of the biggest problems to be overcome in good lighting, causes reduced visibility and ocular discomfort. Raising luminaires well above the street level in order to remove them from the visual axis is one means of minimizing the effects of glare. The mounting heights for luminaires have been increased in the lighting code to afford greater accuracy of control of this factor.

The committee that developed this standard believes that it is economically feasible to provide lighting of such quality and adequacy as will reduce the night accident rate substantially to the order of that experienced in daytime.

The cost of providing such lighting is not greater than the cost of fatalities and accidents resulting from failure to do so. However, the same pocketbook does not defray both types of costs. The costs of street and highway light-

PRESTON S. MILLAR is president of the Electrical Testing Laboratories, Inc., and a member of the Committee on Street and Highway Lighting of the Illuminating Engineering Society which developed the American Standard Practice for Street and Highway Lighting, 1945. The present article appeared in the A. S. A. publication "Industrial Standardization" for May-June 1948. Copies of the American Standard Practice for Street and Highway Lighting are available from the American Standard Association, 70 East 45th Street, New York 17, N. Y. for 50 cents.



. . . says J. S. Wilson, Mayor of Wilmington, Delaware

TROLLEY COACHES are carving big chunks out of Wilmington's traffic jams, boosting business and realty values. No wonder they're a hit with riders, merchants, and taxpayers!

"the people's choice"

says His Honor . . .

"We've never regretted our decision to convert our transportation system to trolley coaches. They're quiet, safe, comfortable, well lighted, well ventilated, and capable of excellent operation on hills—the favorite vehicle with our 140,000 transit riders!"

"they keep traffic moving"

says City Engineer E. F. Koester . . .

"We noticed a great improvement in the easing of traffic congestion soon after the trolley coaches were installed. They load at the curb, are big, speedy, and maneuverable. In fact, they set the pace for all traffic."

"a boon to real estate and business"

says C. of C. Executive Manager G. Gassaway . . .

"One of our heaviest building construction areas is along the Newport Pike. We feel that the excellent trolley-coach service there has improved real estate values greatly. And as for helping downtown business, here's how our merchants look at it. If the 19,000 shoppers who come into the central area daily by trolley coach had to depend on automobiles, the whole central area would be tied up and business would fall."

GENERAL ELECTRIC

107-222

For results like these, discuss with your transit company the possibility of making electric transit vehicles the backbone of your city's transportation system. Your G-E transportation engineer will gladly help you decide where they can be economically best applied. Apparatus Dept., General Electric, Schenectady 5, N. Y.

ing are defrayed out of governmental appropriations. Those of traffic accidents are largely defrayed otherwise. In either case, the public pays the bill. The choice is whether the payment is made for the reduction of traffic accidents with decreased loss and suffering; or for greater death compensation, medical, surgical, and hospital expenses, and damage to property. Is it better to spend money for feasible prevention, or to spend an equivalent or a larger sum for cure (when fatalities do not place cure beyond feasibility)?

There is a conviction that good illumination facilitates operations, enhances safety, conserves eyesight, and in the long run promotes economy. Rarely, however, are its beneficial effects so clearly established statistically as in the case of street and highway lighting.

The American Standard Practice for Street and Highway Lighting crystallizes the experience and thinking of a highly competent, diversified group of people who have devoted much study to this subject. It probably recommends a compromise between the grade of lighting that will assuredly reduce night traffic accident rates to those of daytime and the present practice which, with few exceptions, is much below that level. No doubt, as the art advances, this standard will be amended from time to time with closer approach to the desired attainment of the committee's objectives.

Night Games Pay

FLOODLIGHTS for a combination football-baseball system were installed in Lykens, Pa., population 3,500.

Annual gross receipts from semipro baseball at the field jumped from $2,840, the 1946 daytime figure, to $9,841 for night play in 1947. Lykens High School's record football gate prior to the installation of lights was $560; now single-game receipts of $1,500 have been achieved.

The G-E system of 136 lights at the field, owned jointly by the school boards of Lykens and nearby Wiconisco, cost $17,450. Each of the boards appropriated $3,500; the American Legion contributed $2,500; and the Lykens Fire Department added $2,500. By subscription and benefits conducted in the locality, more than $8,000 more was raised to bring the total to slightly more than $20,000.

The surplus of approximately $2,500 was applied to a fund, which is being augmented by 10% of gross gate receipts, for construction of bleachers.

JOHN MASON
Raub Supply Co.
Lancaster, Pa.

Big Playground Lighting In San Francisco

Fifteen hundred children and adults gather at San Francisco's North Beach Playground for the floodlighting ceremonies. The speaker is Ray W. Turnbull, commercial vice-president of General Electric's Pacific District.

SAN FRANCISCO'S North Beach playground, where the DiMaggio brothers and other sports luminaries got their start, became one of the city's best-lighted recreation areas on May 20, when a new General Electric floodlighting system was turned on for the first time.

The lights make night athletics and recreation available to hundreds of children who populate the area near the city's Chinatown. More than 700 children flock to the playground daily during the daylight hours. Almost 200,000 used the park during the 1946-47 period, according to Miss Josephine D. Randall, superintendent of the Recreation Department. Of these, 122,000 were boys, 60,000 were girls, and the rest men and women. Miss Randall said the Recreation Commission hopes to keep the grounds open until 10 p.m.

The floodlights are equipped with sights, similar to those on a rifle, which enable the center of the beam to be accurately spotted on a given area. Sealed against weather, dirt, and insects, the glass spun into the aluminum reflector is made of Tufflex, an impact-resistant, tempered glass. Final approval of the installation was made by Robert A. Devine, manager and chief engineer of the city's Bureau of Heat, Light, and Power.

Street-Light Breakage Is Down

ONLY 354 street lights were reported broken in July 1948 in Kansas City, Mo. This is the lowest July figure since records have been kept. The monthly average of street-light breakage for four successive years is in the adjoining column.

1945	829	1947	712
1946	887	1948 to date	503

In the past the utility company made weekly patrols to determine and replace broken lights. This policy has been changed to nightly patrols with immediate replacement.

Go To It . . . with

PRISMO

You can't bring everything back to the shop for reflectorization. Bridge abutments don't budge easily, and an underpass has no place in a sign shop. But no matter what it is, or where it is, your reflectorization problem is solved by the ready portable Prismo Sign Kit.

The Prismo Sign Kit and the Prismo method of vertical application make reflectorizing immovable objects in the field just a matter of "Go to it"! It's easy! It's quick! It's economical!

Roads all over America are being made safer with the Prismo Sign Kit. Prismo reflectorized culverts, bridge abutments, barricades, underpass walls, guard rails, guard posts, and other roadside aids all over the country prove that "Prismo is outstanding in the field!"

IT'S EASY! HERE'S HOW!

The lightweight Prismo Sign Kit can be transported anywhere. It is compact and complete!

Applying the special Prismo Binder is as easy as the simplest paint job. **Spray** or **brush** on the binder in smooth even strokes.

Spray on the Prismo Spheres with the Prismo Hand Gun. Its simple pump operation evenly distributes the tiny optically clear spheres on the wet binder which "grips" them in place. Reflectorization is finished!

Prismo markings never sleep. By day they stand out clear and distinct . . . readily discernible . . . easily interpreted.

By night, Prismo becomes a glowing sentinel, brilliantly revealing every hidden danger. Its speedy application, wider angle of reflectivity, and longer lasting qualities make Prismo *the* ideal reflective coating for vertical application.

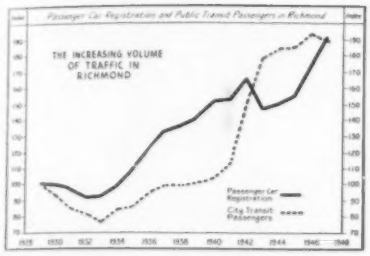
the SPHERE of SAFETY

Write today for
Prismo Bulletin 547

THE PRISMO SAFETY CORPORATION

HUNTINGDON, PA.

Richmond, Va., Maps Its 1960 Traffic Tangle



20-year trend of auto registrations and transit passengers in Richmond.

By ALAN S. DONNAHOE
Director of Research
The Richmond Chamber of Commerce
Richmond, Va.

CASUAL observation shows that the volume of vehicular and passenger traffic in Richmond, Va., is greater than ever before, and increasing almost by the day.

How are we to channel an ever-expanding volume of traffic through the fixed pattern of streets? Because authorities must wrestle with an answer to this question, a study has been made to set forth the facts. Our conclusions are:

1. In terms of combined passenger traffic volume of both passenger cars and the public transit system (number of passengers), 1947 exceeded all previous years in Richmond and was, specifically, 90% greater than 1929, 59% greater than 1940.

2. If the trends continue, we may expect the following increase in volume of passenger traffic over 1947: 11% by 1950, 28% by 1955, 46% by 1960.

How will the projected increase in total passenger traffic be divided between these two modes of urban transportation?

Two assumptions may be made in order to arrive at these further estimates. First (*estimate A*), we may assume that the proportion of traffic carried by each mode of transportation will remain the same as it was in 1947. Second (*estimate B*), we may assume that the proportion of traffic carried by automobiles will increase as it did during the decade prior to the war.

On this basis, we derive estimates of the volume of traffic to be carried by the public transit system in Richmond as follows (*in millions of passengers per year*):

Year	*A*	*B*
1947	78.5	78.5
1950	87.1	84.1
1955	100.9	91.6
1960	114.7	97.9

And similarly, we may estimate the number of passenger cars to be registered in Richmond as follows (*in thousands of cars*):

Year	*A*	*B*
1947	37.7	37.7
1950	41.8	44.7
1955	48.4	57.0
1960	55.1	70.7

Prior to the war, the passenger-car registrations increased steadily in relation to the number of passengers carried by the public transit system. This trend was sharply reversed during the war, so that by 1947 the ratio between the two modes of transportation was almost exactly the same as it was in 1929. It is somewhat unlikely, however, that this ratio will remain the same in the future.

On the other hand, it is also unlikely that the ratio of passenger cars to public transit passengers will increase at the same rate as it did from 1929 to 1940. Some point of saturation exists for this ratio in each metropolitan area, and the rate of growth in car ownership may be expected to decline as it approaches this level.

Thus, the probable increase in passenger-car registration by 1960 may be considered to be somewhere between 46 and 88%, or about 65%.

PASSENGER CAR REGISTRATION AND PUBLIC TRANSIT PASSENGERS IN RICHMOND – 1920 to 1947

Year	Transit Passengers (000)	Passenger Car Registration	Index: Transit Passengers	Index: Passenger Cars	Index: Combined Index
1920	62,588	18,735	100	100	100
1930	86,951	18,715	94	100	96
1931	84,517	18,019	90	97	93
1932	84,087	16,168	90	86	88
1933	81,780	16,970	76	90	82
1934	84,619	18,539	84	99	89
1935	88,502	21,480	86	109	98
1936	88,991	24,082	84	171	105
1937	41,047	26,151	88	155	110
1938	40,869	25,970	86	136	111
1939	47,907	27,899	100	141	115
1940	47,899	29,608	102	150	119
1941	48,846	30,106	110	155	126
1942	67,995	30,744	150	156	156
1943	75,877	32,987	176	166	167
1944	76,519	33,477	165	169	170
1945	76,419	30,456	164	154	174
1946	80,751	34,930	165	173	195
1947	76,515	37,730	159	191	190

Notes

(1) Data for 1930-32 partially estimated. Data for 1946-47 preliminary.

(2) Weighted average with weights in proportion to estimated passenger carrying capacity. Hence this index is a measure of the volume of internal passenger traffic (i.e., number of passenger-trips) in the city.

Transit passengers and auto registrations and their index numbers (1920 = 100) for 1929-1947.

To summarize, the volume of passenger and vehicular traffic in Richmond last year was about 90% greater than in 1929. A further increase of 46% in passenger traffic and 65% in vehicular traffic may be expected by 1960. This is the general magnitude of the problem in urban transportation which confronts Richmond today. Doesn't it also confront you?

44% Preferred New Street Cars

To the Editor:

The June 1948 issue of THE AMERICAN CITY published the summary figures of a recent survey made for us by National Analysts, Inc., Philadelphia, to determine public attitude toward new trackless trolleys placed by Philadelphia Transportation Company on Route 29, its Morris-Tasker line.

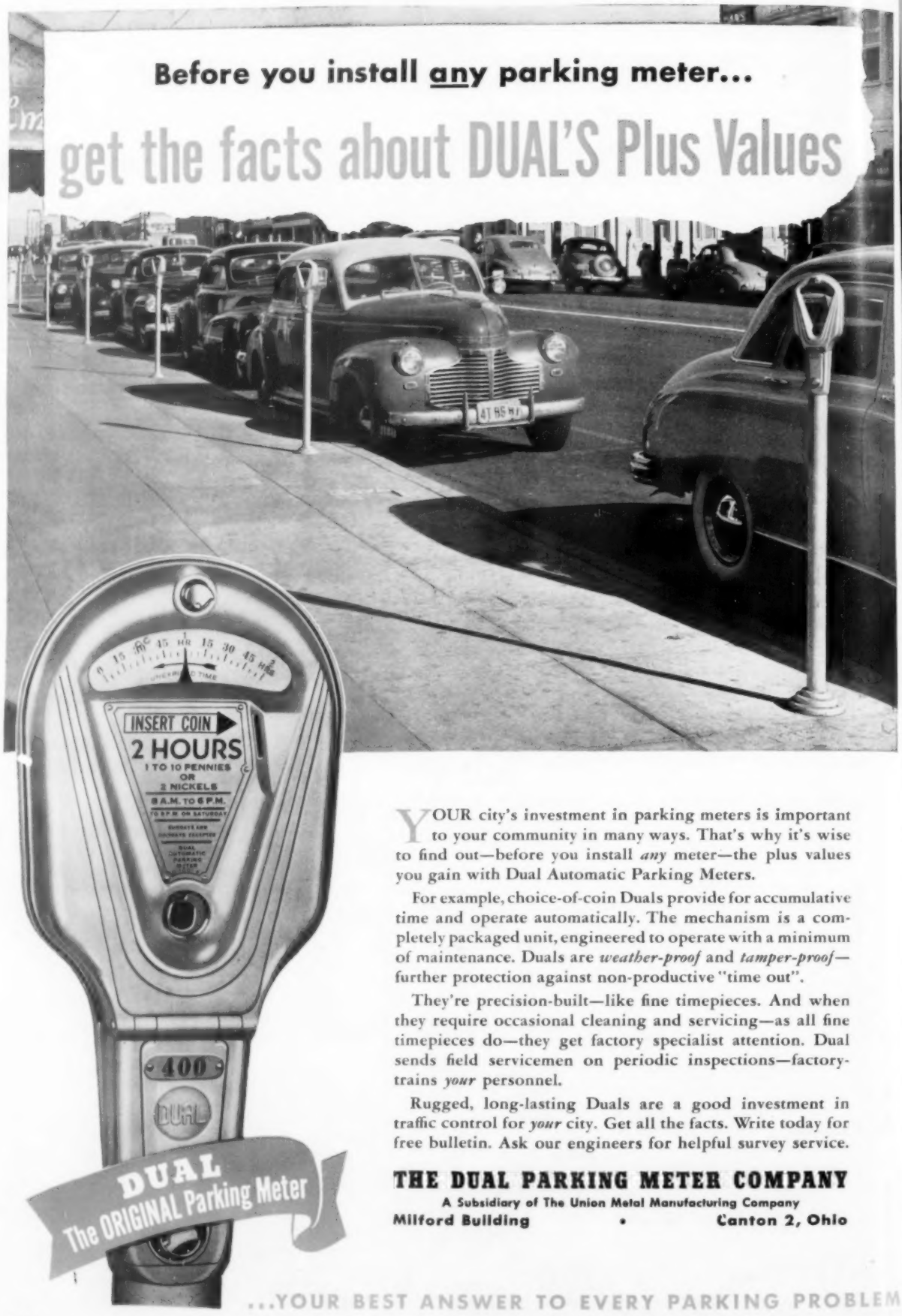
We wish to point out that this survey was on this route where we had operated some of our oldest bus and street car equipment prior to the conversion of the line to trackless trolley operation; also that, in conjunction with the conversion, the City of Philadelphia had completely repaved Morris and Tasker streets over which Route 29 operates.

We believe your readers would also like to have the results of the most recent city-wide survey made for us on the question of rider preference for various types of new transit equipment. This survey, made by Opinion Research Corp. in November 1945, indicated that 44% of those interviewed preferred streamlined street cars; 17% preferred trackless trolleys; 15% preferred buses; 24% had no opinion.

Philadelphia Transportation Company
Philadelphia 2, Pa.

Before you install any parking meter...

get the facts about DUAL'S Plus Values



YOUR city's investment in parking meters is important to your community in many ways. That's why it's wise to find out—before you install *any* meter—the plus values you gain with Dual Automatic Parking Meters.

For example, choice-of-coin Duals provide for accumulative time and operate automatically. The mechanism is a completely packaged unit, engineered to operate with a minimum of maintenance. Duals are *weather-proof* and *tamper-proof*—further protection against non-productive "time out".

They're precision-built—like fine timepieces. And when they require occasional cleaning and servicing—as all fine timepieces do—they get factory specialist attention. Dual sends field servicemen on periodic inspections—factory-trains *your* personnel.

Rugged, long-lasting Duals are a good investment in traffic control for *your* city. Get all the facts. Write today for free bulletin. Ask our engineers for helpful survey service.

THE DUAL PARKING METER COMPANY

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...YOUR BEST ANSWER TO EVERY PARKING PROBLEM

To Get Rid of Traffic Guesswork

By CARL J. RUTLAND *Chairman*
Citizens' Traffic Commission of Dallas County
Dallas, Texas

This article is an excerpt from a paper presented at the Business Men's Conference on Urban Problems held by the Chamber of Commerce of the United States, in Detroit, September 13-14.

OUR downtown areas were never planned for today's or tomorrow's concentration of motor-vehicle traffic. They bulge like a Toonerville trolley. Business concerns want PEOPLE to come into the downtown area, not particularly vehicles. Vehicles are merely the means to the end. People—shoppers—employees—traders—they are the lifeblood of downtown business.

Mass-transportation systems now carry approximately 60% of all those who daily go into and out of the downtown area. They do it with only one-tenth as much street space as would be utilized if the same number went by private car (if that were physically possible). A 50-passenger bus does the work of 29 automobiles. Better service would attract still more shopping persons. Our transit systems should carry at least 75% of those who are habitues of the downtown area. This increase would have a tremendous effect in further alleviating congestion. Mass transportation is definitely a common denominator to every kind of street traffic. Improve its service and carrying capacity, and it benefits every person, every vehicle which uses the street, and every agency which depends upon street traffic. Unquestionably every downtown business establishment has a vital economic interest in the efficiency of the public transit system. Many of the employees and customers of that business depend entirely upon it for transportation. Good transit service aids materially in preventing reductions in downtown real-estate values. It actually means more to retailers than providing expensive parking space for their patrons, although the latter is essential.

Transit Passengers and Business Profits

The profits of any downtown business depend on the passenger-carrying capacity of the traffic system. Yet, few such business interests initiate ideas and purposefully meet with transit management to cooperate in obtaining improved services. Few retailers, in their advertising, tell of transit conveniences to urge patronage. Very few publicly take the leadership in urging and supporting increased fares where necessary to achieve faster, safer, and more adequate capacity service. The city has a very definite economic interest, because good transit service is a definite factor in maintaining taxable values in the downtown area. Failure to expand and modernize service in many cases may be charged to the indifference of some city governing bodies and public-utility commissions. They refuse to grant satisfactory rates whereby services may be improved which will reduce traffic congestion and bring more people into the downtown area.

Moving thousands of vehicles and people daily with safety and dispatch is a science, not guesswork. Yet in many cities a traffic signal is installed because a neighbor suggested it to a councilman. Certain traffic favors are granted to one business executive simply because, apparently, it is good politics. The merchant, the mayor, the civic leader, the businessman—not one of these is a competent traffic authority. They as well as hundreds of other citizens have ideas as to what should be done. Of course they are sincere. No plan or long-range list of individual objectives, with reasons therefor, has ever been presented to them or to the community as a whole, so they continue to theorize, guess, and criticize.

Why Not Train a Local Engineer?

As there is a scarcity of traffic engineers, a city should pick one of its best engineers and send him off to a national training school for a period. Such an engineer can then do a good job, prepare good plans, and prevent recurring wasteful expenditures previously made by theorizing and guessing what should be done in traffic.

Some existing methods fit the exact needs of some communities. They include designated "through" streets, reversible traffic flow, staggered hours, off-street parking, truck re-routing, parking prohibitions, parking meters, one-way streets, channelization, progressive signal systems, loading and unloading restrictions, mass-transportation services, street widening, turning prohibitions, and enforcement of regulations. The push to achieve is lacking.

The needed well-planned traffic project, or product, is meritorius. The merchant, the motorist, the shopper, the public official, and all citizens are the buyers of that product. They are literally hungry for it and clamor for it daily. But there is no seller for this product.

Citizens' Organizations Needed

Some kind of a community organization—perhaps called a Downtown Traffic Committee—is absolutely essential. It could front for many of these projects and put them across. Sometimes there is resentment against the city's doing the job, regardless of its merit. Composing the organization would be one or more representatives from retailers, wholesalers, motor-fleet lines, chambers of commerce, the press, certain city authorities, mass transportation, real estate boards, downtown property owners, parking-station groups and taxicab interests. All of these have a direct economic interest. Properly organized, this group could accomplish almost anything it desires. The city traffic engineering department and public utilities supervisor should conduct any research necessary and furnish technical data. The organization furnishes the push, promotes the project, and sells it to the community.

Meters Provide 600-Car Lot for Village of 4300

IN adopting an ordinance creating a municipal parking system, the City Council of Wayne, Mich., spared merchants and property owners in the business district from special assessments for parking-lot construction.

The ordinance as adopted assures the construction of the Wayne 600-car municipal parking lot in the immediate future. The costs of construction and maintenance are to be paid entirely from parking meter revenues. Special-assessment and revenue-bond financing have been under study by the village officials for several months. Pledging the parking-meter revenues for the construction of the parking facilities has been favorably considered for some time. However, many legal and technical problems had to be solved before the Council could finally consider the adoption.

Bids were received August 30, 1948, for the first step in construction, which was the filling of approximately 70,000 cubic yards of earth. By early spring, Wayne will have the largest municipally owned parking lot in the state. It will give the Wayne merchant a competitive advantage over neighboring communities and provide parkers with Michigan's most modern parking facilities.

Pleasure seekers gladly pay for PARKING ACCOMMODATIONS at West Palm Beach, Florida

***PARK-N-LOT pays for off-street parking facilities wherever it is used . . .**

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*PARK-N-LOT provides for periods from 1 to 10 hours, collects nickels and quarters in advance. Completely automatic in operation, accurate, sturdy and durable, they minimize supervision costs. Motorists approve them, too.

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Parking Meters in North Dakota Cities Outlawed By Rural Objection

What five of the nine parking-meter cities think about it

How It Started

THE referendum which outlawed the use of the parking meters by cities in the State of North Dakota is a vicious instrument in the hands of the electorate and as such should be taken to the highest courts in the lands.

Most states give local rule to the cities. In states such as North Dakota, wherein the city exists only at the will of the state (electorate), most cities cannot safely set up ordinances to govern themselves without fear of attack from other than city dwellers. For instance, the rural dweller may feel that our meat inspection and milk inspection laws are too stringent. Under present conditions, they may be able to force a referendum measure, securing a voting front of rural dwellers against the city dwellers, thus rendering our laws as to inspection of foodstuffs inactive and placing the city dweller at the mercy of the person or persons selling and delivering foodstuffs for consumption within the city. This takes away the right of the city dweller to govern himself within his own community. Traffic laws, health laws, building codes, public-works laws, etc., could be under constant attack from those who may in some minor way be annoyed by the enforcement, whether vigorous or no, on the part of the local authority.

The background surrounding this referendum is as childish as the person who brought it about. Simply this: The man violated the parking laws of a North Dakota city by parking beyond the time limit prescribed by ordinance. In so doing, he deprived others from sharing parking space. He started the referendum and may be successful in taking the parking meters out of the cities of North Dakota. This will deprive the cities of the revenue and also cost them many thousands of dollars in the hiring of more policemen to do the work of the parking meters. The meters have no bearing on this, in that the policeman would have marked his car for overparking and issued the necessary citation anyway.

LLOYD C. JESTER
Chief of Police
Fargo, N. D.

What Happened

Parking meters were outlawed in North Dakota by an initiated measure approved by the voters at the election held June 29, 1948. This matter will be voted on again at the general election in November. Meanwhile the matter has been referred to the Supreme Court of North Dakota, to test the constitutionality of the measure recently enacted. Taking out parking meters has greatly increased our traffic problems.

F. J. BURCKHARD
City Auditor
Devils Lake, N. D.

The referendum law is being questioned as to its constitutionality. A District Court judge issued an injunction restraining the Attorney General from enforcement of the law pending a decision of the Supreme Court. We are using our parking meters (without violation enforcement) even though the law outlawing them took effect on July 29, 1948.

H. T. HINTGEN
City Auditor
Wahpeton, N. D.

Must the Old Congestion Return?

We naturally believe that the operation of parking meters is a home-rule matter and should be determined by each city instead of having it governed by state law. If the temporary injunction, which is now in force, is lifted by the courts, we, of course, will remove the meters.

Before meters were installed, much of the parking space was occupied by merchants and their employees, with the result that the shopper was not able to obtain a parking place. We are also of the opinion that movements of traffic on the street will increase because there will be more drivers hunting for a place to park. Parking will again become a problem.

BYRON J. ROCKWOOD
City Manager
Grand Forks, N. D.

Parking Meters Are Mechanical Policemen

My views regarding the referendum law on the operation of parking meters and those of our city commission are given here.

Without additional taxation we cannot give the public police protection against pilfering, traffic accidents, and dented cars due to improper parking. We cannot assure a preferred parking place to the out-of-town shopper when he comes in to town. We would also like the public to know that their parking coins work for them in improving parking conditions and making a better shopping center.

The simplest means of traffic regulation is by the mechanical policeman (parking meters) so superior to the outmoded way by which the policemen marked the tires with chalk.

Traffic experts, after a nationwide study of this ever-increasing parking problem, say that parking meters are the best means yet devised to regulate and provide parking space for all, eliminating the all-day parker and those selfish individuals who "hog" choice parking space.

The revenue feature of parking meters is, or rather should be, of secondary importance. Unfortunately one or two of the nine cities in North Dakota with parking meters have placed revenue ahead of accommodations which meters provide and have administered their parking ordinances accordingly. That is why we have this anti-parking measure before us today. All fair-minded people generally agree that parking meters have a place and are a necessity in the larger towns of our state, but that they should be used primarily for traffic and parking control, rather than as a revenue producer. We do not feel that the entire state should be penalized for the misdeeds of one or two of our parking-meter cities.

Parking meters are comparatively new in North Dakota and mistakes in administration were bound to happen. These mistakes have been or are now being corrected. I personally feel that if we do lose our meters in this coming November election, the meter cities are going to have the biggest headache they have ever had in dealing with traffic regulations.

EDGAR T. AGNEW
President of City Commission
Dickinson, N. D.

Emergency Traffic-Signal Indications

BY FAR the most popular form of emergency traffic-signal control is to turn all of the intersections signals along a given path to steady red. In such a system, often referred to as the "all-red fire feature," both the main- and cross-street traffic will come to a halt, providing emergency vehicles with a reasonably safe passage along a given route.

Another very popular form of emergency signaling is the provision of a green signal for the emergency vehicles and a steady red for cross-traffic.

The actual control of the emergency signals is usually obtained through relays or a similar device located in each intersection controller and energized from a convenient location through an interconnecting cable. Standard emergency signal controls that permit both the manual and automatic timing of the duration of the emergency indications are available for location in the fire house, fire-bureau headquarters, or the police station.

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Youngstown TROLLEY COACH Conversion Increased

Total Net Revenue 23.7%
Net Revenue Per Mile 39.0%
Net Revenue Per Vehicle 23.6%
Net Revenue Per Passenger 25.2%

The Youngstown Municipal Railway Company started operating trolley coaches in 1936. At that time four motor bus routes and two street car lines were converted. Riding and revenue increased to such an extent that the company decided to modernize most of its main transit routes with these speedy electrics. There are now 72 trolley coaches being operated over 72.4 round trip miles in Youngstown. The performance of each line far exceeded the most optimistic predictions made by the management. Typical of the lines converted is the Mosier-Albert. It was changed from motor bus to trolley coach service during 1945-1946. The results of this changeover speak for themselves. After a full year's operation with trolley coaches:
TOTAL NET REVENUE INCREASED 23.7% . . .
NET REVENUE PER MILE INCREASED 39.0% . . .
NET REVENUE PER VEHICLE INCREASED 23.6% . . .
NET REVENUE PER PASSENGER INCREASED 25.2%.
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Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Administrative Procedure — Defect In Notice of Hearing by Failure to Specify Time

In action to enjoin construction of slaughter house, held that where Board of Zoning Appeals of City of Grand Rapids failed to specify hour of hearing in published notice thereof, such defect rendered board's action in granting permit void. *Baura* v. *Thomasma*, 32 N. W. (2d) 369 (Mich., May 18, 1948).

Bonds — Power of Incorporated Village of 28 Freeholders to Issue Improvement Bonds

Where nonresident property owners brought action to enjoin issuance of improvement bonds by municipality composed of 28 freeholders on grounds that Legislature did not have power to create municipality of such limited number and authorize it to issue bonds and impose taxes, held that statute extends term "municipality" to include any city, town or village which is incorporated therefore bonds were valid. *State* v. (21) 737 (Fla., Apr. 2, 1948). *Reh. den.* Apr. 20, 1948).

Eminent Domain — Street Widening Project — Acquiring Land for the Relocation of Moved Houses As Public Use

In action to restrain condemnation of plaintiff's land by City of New York for use in relocating buildings required to be moved by reason of expressway widening project, held that such taking was authorized as a public use even though located some distance from expressway. *Watkins* v. *Ughetta*, 78 N. Y. S. (2d) 393 (N. Y. App. Div., Apr. 12, 1948).

Incorporation — Absence of Statutory Requirements as to Notice — Application of Common Law Requirements

Where taxpayer sought to prohibit County Board of Elections from incorporating Village of Secor, alleging illegal actions of Board of Trustees, held that in absence of state statute common law requirements of notice to all and presence of all members at meetings would apply and here by one member being absent and without notice the action by the other two was void. *State* v. *Board of Elections of Lucas County*, 78 N. E. (2d) 761 (Ohio App. July 3, 1947).

Parking — All-Night Prohibition Upheld

In action to review conviction for violating city regulation prohibiting all-night parking on city streets, held that motorists have no inherent right to use streets for storage purposes and regulatim will not be declared unconstitutional in absence of showing of unreasonableness. *De Pace* v. *Mayor and Council of Wilmington*, 58 Atl. (2d) 742 (Del. Super. Ct., Apr. 27, 1948).

Parking Meters — New Objections to Raised

In action to enjoin installation of parking meters on ground that adjoining landowners own to middle of street and are thereby deprived of their property, that persons with vehicles over 20 feet long are discriminated against, that merchants believe that their business will suffer, that meter company pays no taxes, that no redress is afforded in case of mechanical failure of meters, and that no provision is made for unavoidable delays in moving parked vehicles, held that city's police powers were sufficient to regulate traffic through installation of parking meters. *Stephens* v. *City of Russell*, 209 S. W. (2d) 91 (Ky. App., Feb. 27, 1948).

Policemen—Authority of Mayor To Appoint Chief

In action challenging authority of mayor to appoint chief of police of City of Hot Springs, held that since statute excluded from operation of Civil Service Act selection of chief of police in any city having commission form of government, and since city did not have such form of government, mayor was without authority to make appointment. *Connor* v. *Ricks*, 208 S. W. (2d) 10 (Ark. Feb. 2, 1948).

Policemen — Authority to Block Streets and Search All Persons And Vehicles Entering or Leaving Area

Where City of Los Angeles police officers blockaded certain area of city and searched, without warrants, all persons and vehicles entering or leaving such area, held that such action amounted to unreasonable searches and seizures proscribed by the Federal Constitution. *Wirin* v. *Horall*, 193 Pac. (2d) 470 (Cal. App., May 17, 1948).

Policemen — Chief May Limit or Prohibit Negro Policemen from Arresting White Persons

Where City Council passed resolution to employ Negro policemen for Negro sections only and Chief prohibited Negro policemen from arresting white persons, held that city charter empowered Chief to assign duties and areas for members of force, and to limit their right to make arrests or prohibit them from making any arrests at all and wisdom of his decisions is not matter of judicial review. *Yarn* v. *City of Atlanta*, 47 S. E. (2d) 556 (Ga., Apr. 14, 1948).

Retirement — Contribution by City to Fund — Unlawful Taxing Power Vested in Board of Trustees

Where City of Dearborn ordinance authorized board of trustees of retirement system to determine amount of city's yearly contribution to fund, held that mandamus would not lie to compel council to appropriate such amount, as ordinance vested indirect and unlawful taxing power in board. *Thiesen* v. *Parker*, 31 N. W. (2d) 806 (Mich., Apr. 5, 1948).

Schools — Appropriation for Expenses — Board of Education and Not City Held to Possess Discretion as to Sums

In mandamus to compel mayor and council to appropriate amount estimated by school board to be necessary for expenses for fiscal year, held that state statute gives board right to determine amount needed and city was merely agent through which funds therefor were raised and appropriated, having no discretion as to amount, and therefore mandamus would lie. *Mayor and Council of Wilmington* v. *State ex rel. DuPont*, 57 Atl. (2d) 70 (Del., Nov. 24, 1947). *Reh. den.* Dec. 18, 1947.

Sewer — Connection with Required Payment for Use Regardless of Wording of Contract

Where contract between private sanitary association and city for connection of sewers with city system provided for payments for connection only and association claimed under contract exemption for payment for use, held that public policy required all property owners benefited by sewer system to pay for its use notwithstanding the contract. *Louisville and Jefferson County Metropolitan Sewer District* v. *St. Matthews Sanitary Association*, 208 S. E. (2d) 490 (Ky. App. Div., Feb. 6, 1948).

Sewer Rentals — Contract Between City and University for Connection With and Use Without Charge

In mandamus by City of Columbus to compel business manager of Ohio State University to authorize payment of money appropriated by General Assembly for payment to city for sewer rentals, held that contract by city granting University right to connect with and use sewer system without cost was intended to cover only "construction without costs" and University must pay rental to help defray cost of treatment of sewage by city. *State* v. *Taylor*, 79 N. E. (2d) 127 (Ohio, Apr. 28, 1948).

Taxation — Levy for Street and Bridge Purposes in Gross Invalid

Where City of Quincy levied tax for "street and bridge purposes" without specifying amount levied for each separately, held that statute required amount be separated into levy for bridge purposes and for street purposes. *Central Illinois Public Service Co.* v. *Lawless*, 79 N. E. (2d) 67 (Ill., Mar 18, 1948). *Reh. den.* May 13, 1948.

Taxicabs — Power of City to Levy Gross Receipts Tax on—Recovery

In action to enjoin collection of gross receipts tax for privilege of operating taxicabs, held that city was unauthorized to levy such tax in view of statute limiting fees chargeable by city to registration fee alone. *Crow* v. *City of Corpus Christi*, 209 S. W. (2d) 922 (Texas, Mar. 24, 1948). *Reh. den.* Apr. 28, 1948.

Water — Extraterritorial Service — Discrimination in Supplying Outside Area

In mandamus to compel City of Cincinnati to permit connection of water mains of subdivision located outside of city with water main of county with whom city had contracted to furnish water service, held that city was not required to supply all who demanded service outside of city since it is authorized to dispose of its surplus waters in manner it chose. *State ex rel. Indian Hill Acres* v. *Kellogg*, 79 N. E. (2d) 319 (Ohio, May 5, 1948).

Water Rates — Validity of Sliding Scale — Alleged Discrimination

Where owner of group of buildings was supplied water through meter for each building while city contracted with housing authority to meter all water supplied it on one meter, thereby effecting reduced charge because of quantity used, held that owner was not entitled to be supplied through one meter for all his widely-dispersed property. *Manchester Gardens Corporation* v. *Town of Manchester*, 58 Atl. (2d) 734 (Conn., Apr. 9, 1948).

Streets—Vacation of at Railroad Crossing—Fraud—Special Damages

Where city proceeded to vacate portion of public street at railroad crossing, held that unless plaintiff alleged special damages complaint would be considered insufficient, even though complaint alleged unlawfulness of city's agreement. *Burridge* v. *City of Mishawaka*, 77 N. E. (2d) 297 (Ind., Feb. 10, 1948).

Water—Town Road Construction Impeding Movement—Liability

Where town constructed road as to obstruct movement of water of abutting land, held that town was liable for damages by failing to provide adequate drainage for surface waters where damages were not caused by floods. *Huerth* v. *Town of Prairie Du Sac*, 31 N. W. (2d) 187 (Wis., Feb. 17, 1948).

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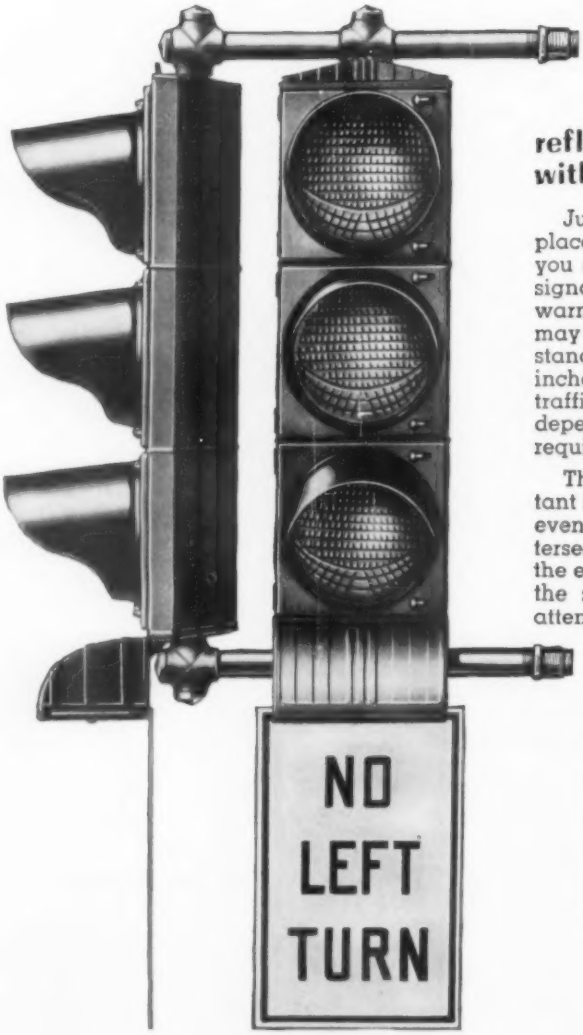

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Just remove the end plate and replace it with the base light and there you are ... with an up-to-the-minute signal that can carry any illuminated warning or information sign that you may desire. The base will take a standard sign 12 x 18, 18 x 24 or 24 x 36 inches. Either one or two 60-watt traffic signal lamps may be used, depending upon the amount of light required.

This illuminated sign is an important safety measure in any location.... even at brightly lighted downtown intersections where the extra light from the efficient base reflector, high lights the sign and attracts the motorist's attention.

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The Municipal Bond Market

STATE and municipal capital borrowing in the first nine months of 1948, according to preliminary figures, approximated the total of $2,300,000,000 for the entire year 1947. Thus a new all-time borrowing record is in the making for the current year. The greatest concentration of new borrowing, aside from state issues of veterans' bonus bonds, has been, as was to be expected, in those areas which have experienced the largest increases in population since 1940. A feature of the distribution of post-war municipal borrowing which is less readily explainable, however, is the limited participation, thus far, by many of the larger cities.

Small-City Borrowing Prevails

Among the more than 350 local governments that sold general obligation bond issues of $400,000 or larger in the first nine months of 1948, only 55 of the nation's 200 largest cities in 1940 were included. A total of 75 of the 200 were represented if bond sales by their overlapping counties and school districts are taken into account. In only one large state, Texas, were all of the cities over 50,000 population included. Widespread borrowing by metropolitan counties was conspicuously absent. Of these counties in which the 200 largest cities are located, only 13 joined the $400,000-or-larger borrowing classification in the nine-month period.

A number of these larger cities, it should be said, satisfied their immediate post-war financing requirements in 1946 and 1947, but their borrowing activities have not been sufficient to offset the generalization suggested by the 1948 sample. Among the factors that appear to account for this situation are the lagging growth of central cities as compared with their peripheral areas, the finite policy of many to postpone their major improvement programs in the hope of some deflation in construction costs, and, in some instances, the availability of improvement reserves accumulated in the war period or the adoption of a pay-as-you-go program.

Average Debt Load Low

As a consequence of this somewhat limited participation in post-war borrowing by the larger cities, their tax-supported debts, on the average, have not risen in proportion to the recent general increase in municipal debt. In fact, if increases in population and taxable valuation are taken into account, the average debt load of the nation's 200 largest cities has risen very little and is considerably below the level of 1935, or even of 1941.

MEDIAN OVER-ALL NET DEBT
200 LARGEST U. S. CITIES

Year	Per Capita	Ratio to Estimated Full Taxable Value
1935	$109.33	7.3%
1941	92.53	6.2%
1947	69.39	4.7%

The table above gives the median, over-all net debt, on a per capita basis and in relation to estimated full taxable value, in 1935, 1941 and 1947, for this 200-city group. Composite figures have been used, by combining with the direct debts of the cities their proportionate shares of the debts of overlapping local units of government. The figures also represent net tax-supported debt after deduction of general sinking funds and the debts of self-supporting public service enterprises.

FREDERICK L. BIRD
Director of Municipal Research
Dun and Bradstreet, Inc.

Use Voting Machines, Says Rhode Island State Department

IT IS mandatory under the provisions of our law in Rhode Island to use voting machines in every city and town at all elections. We recommend highly the use of voting machines and have been using them in this state since the general election in 1936. We find them to be accurate and we obtain the results very soon after the closing of the polls. When paper ballots were used, it was sometimes a day or two before final results could be obtained.

JAMES C. CARR
Deputy Secretary of State
Rhode Island

Urges Self-Liquidating Hydro Projects Now

IN ORDER to meet the great need for additional electric power, the Federal Government should begin construction immediately of those projects that it can be shown are self-liquidating. This was urged by Samuel B. Morris, General Manager and Chief Engineer of the Los Angeles Municipal Department of Water and Power at the recent convention of the American Public Power Association, held at Colorado Springs, Colo.

Mr. Morris pointed out that the Federal Government takes the position that it alone has the power to build hydroelectric plants on interstate rivers. He also pointed out that in the northwest both public and private power interests had joined forces to urge this construction to meet present needs.

"We who operate these utilities," he said, "cannot wait for depression years to build. We must and are building now, whatever the cost."

He urged that the government abandon the policy of holding up self-sustaining works until periods of depression, and asked that it go back to the policy adopted when the Hoover Dam was built, which provided repayment with interest over a period of 50 years supported by contracts for the sale of power.

To finance these projects, he urged issuing of revenue bonds on a callable basis to take advantage of possible future drops in interest rate. The revenue bonds would be guaranteed by contracts with publicly and privately owned utilities.

***Commemoration Through Community Services*, a handsome brochure on living memorials, is available from *The American City*, 470 Fourth Ave., New York 16, N. Y., for $1.00.**

Recent City Manager Appointments

C. L. BARNHARDT, Director of Public Works, Raleigh, N. C., has become manager of New Bern, N. C.

MRS. WILLIE J. BROCKMAN has succeeded F. S. BRADEN at Beaumont, Texas.

C. H. HELMS, manager, Tryon, N. C., 1931-44; Morganton, N. C., 1944-47, and New Bern, N. C., since 1947, has returned to Morganton.

R. C. HOPPE, manager of Sweetwater, Texas, 1941-47, and of Midland, Texas, 1947-48, has been appointed at Waco, Texas.

BERTILL JOHNSON, Director of Finance, Winnetka, Ill., has been appointed manager of Lebanon, Mo.

SHERWOOD L. REEDER, manager of Greendale, Wis., 1939-41, director of master planning in the Cincinnati area, 1944-47, and executive secretary of the Cincinnati Citizens' Development Committee since 1947, has become the first manager of Richmond, Va.

RAYMOND L. ROGERS has succeeded Franvis A. Vaughn at College Station, Texas.

MRS. RUTH H. SMITH has become manager of Lake Alfred, Fla.

HOWARD STANTON, former mayor, has become manager of Fort Pierce, Fla.

JAMES G. WALLACE, manager of Bangor, Me., 1932-41; Wilmington, N. C., 1941-42; Kenosha, Wis., 1942-46; Fargo, N. D., 1947, and Hopewell, Va., since January 1948, has become the first manager of Fair Lawn, N. J.

W. T. WILLIAMSON, manager of Pampa, Texas, 1938-40, has been appointed manager of Lindsay, Okla.

CLARENCE E. RIDLEY
International City Managers' Association
Chicago 37, Ill.

ZERO-LASTIC

SPECIFYING

The Greatest Bituminous Rubberized Sealing Compounds Ever Developed!

Hot Poured Type for Concrete Joints

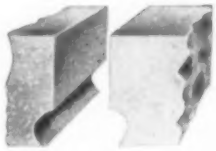


Fig. 1

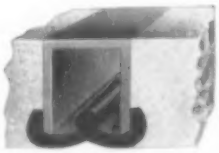


Fig. 2

Fig. 3

Fig. 4

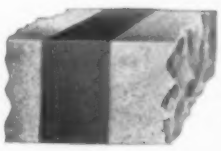
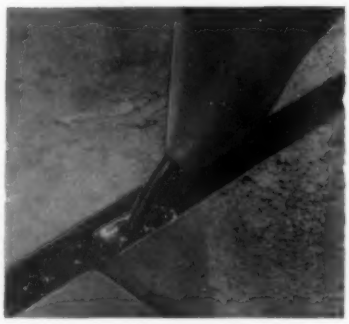


Fig. 5

ZERO-LASTIC products conform fully to Federal Specification SS-F-336a.

Distributors wanted in all parts of the U. S.



Contractors and Engineers invited to act as agents.

ZERO-LASTIC is a certification mark for a bituminous rubberized sealing compound which has been tested in actual use for many years and has been found to fulfill the merits claimed for its outstanding qualities. A ZERO-LASTIC product has intense adhesive qualities, is elastic, self-healing and extendable at zero degrees temperature. It is a product that can be melted and utilized in liquid condition or as a cold material extruded into various forms.

ZERO-LASTIC products are well adapted as a seal for expansion joints and operate on a more effective basis than earlier expansion joints by reason of the fact that the earlier expansion joints were counted upon for re-expansion from within after the release of compression. Cork and sponge rubber were about the best of these products as they seemed to have a greater resiliency. Other fibrous materials were treated with waterproofing solvents but were found wanting because of their failure to return sufficiently to the full dimension after compression, with the result that the space reserved for expansion joint fillers was not filled after the first compression. A ZERO-LASTIC product bridges the space to be waterproofed.

The following is a description of the various methods illustrated.

Fig. 1—a molded form for horizontal and vertical filling—this form of construction withstanding expansion and contraction and vertical shear better than ordinary poured joints.

Fig. 2—a rubber mold form in combination with a metal channel cap producing outlines shown in Fig. 1.

Fig. 3—two channel caps, one overlapping the other and having space between with rubber panels as molding forms producing the effect in Fig. 1.

Fig. 4—a hot poured filling consisting of a ZERO-LASTIC product as the base and a malleable asphalt top.

Fig. 5—a straight hot poured filling with a ZERO-LASTIC product occupying the entire space between the fiber base and the pavement surface.

Fig. 6—a base of a ZERO-LASTIC product and a top portion of a malleable asphalt.

Fig. 7—a ZERO-LASTIC base interlocked in the concrete and bridging the space above the fiber filler. The top portion can be of any satisfactory material to take the wear of the traffic.

Fig. 8—a pre-formed ZERO-LASTIC strip as shown in Fig. 7 for bridging the space between monolithic surfaces.

Fig. 9—a strip comprising a sponge rubber core and a ZERO-LASTIC coating.

Fig. 10—a ZERO-LASTIC base and a fibrated asphalt crown held in place by a channel cap—the space occupied by the channel cap being later filled with a ZERO-LASTIC sealing compound.

Premolded Strips for Concrete Joints

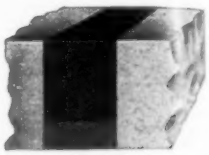


Fig. 6

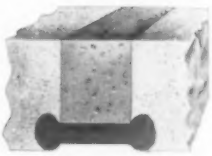


Fig. 7

Fig. 8

Fig. 9

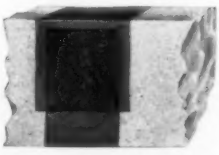


Fig. 10

Servicised Products Corp., 6051 W. 65th St., Chicago 38, Ill., is a licensee under these various patents. This company is the manufacturer of PARA-PLASTIC which is endorsed as a ZERO-LASTIC product.

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City Managers Discuss Their Growing Responsibilities

"WHERE do you go from here? In what sort of repute will you be held 15 to 25 years from now?"

Those questions were posed by Kim Sigler, Governor of Michigan, to the 199 city managers from 34 states and Canada who attended the 34th annual conference of the International City Managers' Association at Mackinac Island, Mich., September 12-16. Referring to the status of the profession, Governor Sigler, at the opening session, pointed out that city managers are "just beginning to go to town," and that "the opportunity exists to make city managers one of the most important factors in the government of the country." He warned, however, "You will go either a long way or not very far at all," and cited the example of the British "sheriff," a post which once carried a great deal of responsibility and authority but which now is an almost wholly ceremonial position.

The 412 persons at the conference were aware of the growth in importance of the city-manager profession. There are now more than 843 cities operating under the council-manager plan, representing 16 million people. Indications are that the council-manager plan will become the predominant form of local government in the United States within a few years.

Managers as Community Leaders

The presidential address of C. A. Harrell, City Manager of Norfolk, Va., showed clearly that a new concept, that of the "City Manager as a Community Leader," has emerged. There is no longer any clear-cut separation of policy and administration, Harrell declared. He urged that managers supply initiative and imagination in municipalities where council members lack such qualities. Most council members, he pointed out, are, after all, unpaid, and not in a position to give the time and attention necessary to formulating long-range plans and programs.

Stressing repeatedly the importance of municipal public relations programs as a prime tool for community leadership, Mr. Harrell said that the old concept of "popular support being generated by a kind of mechanical efficiency" is definitely out. Every effort must now be made to take government to the people, and to make its operation understandable to everyone in the community, he concluded.

"What has been done in the past is as nothing compared to what will be done in the future," declared Louis Brownlow, president of the I.C.M.A. in 1922 and retired director of the Public Administration Clearing House. Speaking briefly at a dinner meeting, Mr. Brownlow said that the fight for democracy will be won at home—in our cities—and that their administration will reflect the ever-rising hopes of mankind.

Robert Flack, City Manager of Durham, N. C., who had attended as a youthful observer the first two city-manager meetings more than 30 years ago, was asked to make some unscheduled comments at the concluding session of the conference. He said that city managers as a group should try to develop beyond the "elementary football stage" of dealing exclusively with techniques, and strive to create a broader base for democracy, recognizing squarely that sometimes one-sixth of the population now participates in local elections. City managers represent the only wholly trained group of public administrators and servants in the country, and as such have vast responsibilities, Flack declared.

Sense of Participation Important

Herman G. Pope, director of the Public Administration Service in Chicago, outlined the problems faced by the manager in a position of administrative leadership—within his own organization. He stressed the importance of having employees aware of their main objectives of making their municipality a better place to live and work, and in enlisting their support. He emphasized the need for giving municipal employees the "dignity that comes with a sense of participation," and doing everything possible to better human relationships within the municipal organization.

Other visiting speakers and discussion leaders included Walter H. Blucher, executive director, American Society of Planning Officials; James M. Mitchell, executive director, Civil Service Assembly, and Louis H. Schimmel, director, Municipal Advisory Council of Michigan.

Among the discussions of major interest at the conference were those on council-manager relationships, training programs for public employees, personnel problems and employee morale, planning and housing, municipal public relations, and methods of keeping in touch with public opinion.

Governments Division Commended

The only important resolution adopted by the conference was one commending the Governments Division of the Bureau of the Census for its work and reports and urging that the appropriations for this Division be restored.

John H. Ames, city manager of Ames, Iowa, was elected president of the Association for the forthcoming year. Vice-presidents are the following managers: A. J. Koenig, Milford, Conn.; Harold C. McClintock, Hutchinson, Kans.; Carl H. Peterson, Saginaw, Mich.; Ross E. Wyndham, St. Petersburg, Fla., and John C. Hiteshew, Sewickley, Pa. The Association chose Palm Springs, Fla., for its 1949 meeting place.

A more extensive account of the discussions and proceedings will appear in *Public Management*, published monthly by the International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill.

The City Manager As a Policy Planner

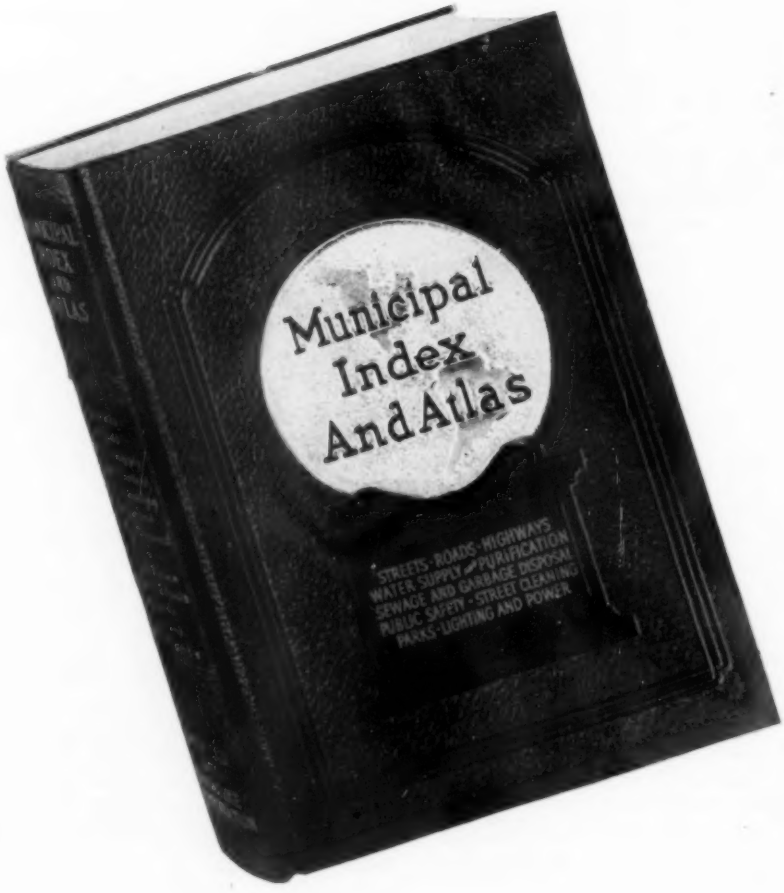
The city manager has a moral obligation to devise careful plans, policies if you will, for submission to council. More than a mere advisor, he is a formulator of action. He is a creator, a planner. He does not limit himself to worship of the gods of techniques, procedures, and implementation. Rather he visualizes broad objectives, distant goals, far-sighted projects.

This done, he presents his explorations in the field of policy to the council for acceptance or rejection.

Is this usurping the logical demain of elected representatives? I don't think it is. It is impossible for the city manager to say what the policy will be. There is only one legislative body. But I hold that it is the manager's solemn duty to say what, in his judgment, the policy ought to be. He does this by presenting a positive program, and by supporting it with logical argument. The manager cannot and should not take such a program directly to the people. Such a step is contrary to the principle of this type of government. But, the manager who submits positive programs with definite recommendations directly to the council is making our profession a dynamic force for community good.

From the Presidential Address of C. A. Harrell, City Manager, Norfolk, Va., at the Mackinac Island Conference of the International City Managers' Association.

1948 EDITION



Over 780 pages, giving names of City Officials, Maps and Population figures and Condensed Catalogs and listings of manufacturers of equipment and supplies for municipalities. This record-breaking 22nd Edition is being constantly used by municipal officials throughout the country, who are interested in having close at hand illustrations and descriptions of the products of responsible manufacturers who want municipal business.

The Municipal Index

470 Fourth Avenue **New York 16, N. Y.**

Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Oct. 4-6—El Paso, Texas
League of Texas Municipalities. Annual Convention (Hotel Cortez). Exec. Dir., E. E. McAdams, 2220 Guadalupe St., Austin 21, Texas.

Oct. 4-7—Denver, Colo.
National Tax Association. Annual Conference. (Hotel Cosmopolitan). Sec., Ronald B. Welch, P. O. Box 1799, Sacramento 8, Calif.

Oct. 4-7—Buffalo, N. Y.
International Municipal Signal Association. Annual Meeting (Hotel Statler). Sec., Irvin Shulsinger, International Municipal Signal Association, Inc., 11 W. 42nd St., New York 18.

Oct. 4-7—Ottawa, Canada
Civil Service Assembly. Annual Conference on Public Personnel Administration. (Hotel Chateau Laurier, Hotel Lord Elgin). Dir., James M. Mitchell, 1313 E. 60th St., Chicago, Ill.

Oct. 5-6—Fort Dodge, Iowa
American Water Works Association—Iowa Section. Annual Convention (Hotel Wahkonsa). Exec. Sec., H. V. Pedersen, Supt. and Mgr., City Water Works, Marshalltown, Iowa.

Oct. 6-9—St. Louis, Mo.
Association of School Business Officials. Annual Convention (Hotel Jefferson). Sec.-Treas., H. W. Anderson, 306 E. Lovell St., Kalamazoo, Mich.

Oct. 7-8—Mansfield, Ohio
American Water Works Association—Ohio Section. Annual Convention (Hotel Mansfield-Leland). Sec.-Treas., F. P. Fischer, Sales Engineer, Wallace & Tiernan, Cleveland, Ohio.

Oct. 7-8—Hot Springs, Ark.
Arkansas Municipal League. Annual Convention (Hotel Arlington). Exec. Dir., Glenn G. Zimmerman, 401 Main, No. Little Rock, Ark.

Oct. 10-12—Wichita, Kans.
Kansas Association of Municipal Utilities. Annual Meeting (Hotel Broadview). Ass't Sec.-Treas., A. D. McGuire, P. O. Box 191, Osawatomie, Kans.

Oct. 10-13—Galveston, Texas
American Water Works Association—Southwest Section. Annual Convention (Hotel Buccaneer). Sec.-Treas., L. A. Jackson, Mgr. Little Rock Water Works, Little Rock, Ark.

Oct. 10-13—Philadelphia, Pa.
National Association of Commercial Organization Secretaries. Annual Convention (Hotel Benjamin Franklin). Exec. Sec., Miss Elizabeth Glenn, 1615 H St., NW., Washington 6, D. C.

Oct. 10-14—New York, N. Y.
International Association of Chiefs of Police. Annual Conference (Hotel Pennsylvania). Exec. Sec., Edward J. Kelly, 918 F St., NW., Washington, D. C.

Oct. 11-13—Springfield, Ill.
Illinois Municipal League. Annual Convention (Hotel Leland). Exec. Dir., A. L. Sargent, I.M.L., 537 South Fourth St., Springfield, Ill.

Oct. 11-13—New York, N. Y.
American Society of Planning Officials. Annual Meeting (Hotel New Yorker). Exec. Dir., Walter H. Blucher, 1313 E. 60th St., Chicago 37, Ill.

Oct. 11-13—Philadelphia, Pa.
Institute of Traffic Engineers. Annual Meeting (Hotel Warwick). Exec. Sec., Robert S. Holmes, 212 Strathcona Hall, New Haven 11, Conn.

Oct. 13-14—Hastings, Nebr.
League of Nebraska Municipalities. Annual Convention (Hotel Clark). Exec. Sec., C. E. Beals, 408 Continental Bldg., Lincoln, Nebr.

Oct. 13-15—Boston, Mass.
American Society of Civil Engineers. Regional Meeting (Hotel Statler). Sec., William N. Carey, 33 W. 39th St., New York, N. Y.

Oct. 13-15—Atlantic City, N. J.
Pennsylvania Water Works Association. Annual Meeting (Hotel Chalfonte-Haddon Hall). Sec.-Treas., E. R. Hannum, 510 Telegraph Bldg., Harrisburg, Pa.

Oct. 13-15—Montgomery, Ala.
American Water Works Association—Alabama-Mississippi Section. Annual Meeting (Hotel Whitley). Sec., John L. Snow, First National Bank Bldg., Montgomery, Ala.

Oct. 13-16—Seattle, Wash.
National Association of Housing Officials. Annual Meeting (Hotel Olympic). N.A.H.O., 1313 E. 60th St., Chicago 37, Ill.

Oct. 14-15—Bedford, Pa.
Pennsylvania Municipal Authorities Association. Annual Convention (Hotel Bedford Springs). Sec.-Treas., Claude C. Fogelman, 1717 Main St., Northampton, Pa.

Oct. 14-16—Toronto, Ontario
Community Planning Association of Canada. Ontario Regional Conference and National Annual Meeting. Exec. Dir., Alan H. Armstrong, 56 Lyon St., Ottawa, Canada.

Oct. 15-17—Phoenix, Ariz.
American Water Works Association—Arizona Section. Annual Convention (Hotel Westward Ho). Sec., Mrs. Helen Rotthaus, San. Eng. Div., State Dept. of Health, Phoenix, Ariz.

Oct. 17-19—Charlotte, N. C.
North Carolina League of Municipalities. Annual Conference (Hotel Charlotte). Exec. Sec., Mrs. Davetta L. Steed, 1009 Raleigh Bldg., Raleigh, N. C.

Oct. 17-20—Boston, Mass.
American Public Works Association. Annual Conference (Hotel Copley Plaza). Exec. Dir., Donald F. Herrick, 1313 E. 60th St., Chicago 37, Ill.

***Oct. 18-20—Pittsburgh, Pa.**
Engineers' Society of Western Pennsylvania. Annual Water Conference (Hotel William Penn). Chairman, H. M. Olson, Hotel William Penn, Pittsburgh 30, Pa.

Oct. 18-20—Philadelphia, Pa.
National Institute of Governmental Purchasing. Annual Conference (Hotel Bellevue-Stratford). Exec. Dir., Albert H. Hall, 730 Jackson Place, NW., Washington 6, D. C.

Oct. 18-21—Detroit, Mich.
Federation of Sewage Works Associations (Hotel Statler). Sec.-Treas., W. H. Wisely, 325 Illinois Bldg., Champaign, Ill.

Oct. 18-22—Chicago, Ill.
National Safety Council. Congress and Exposition (Stevens-Congress-Palmer House-Sherman). Pres.-Vice-Pres., Ned H. Dearborn, 20 North Wacker Drive, Chicago 6, Ill.

Oct. 20-22—Philadelphia, Pa.
American Water Works Association—Four States and Western Pennsylvania Sections. Annual Convention (Hotel Penn Sheraton). Sec. (Four States), W. A. Welch, Industrial Chemical Sales Div., W. Va. Pulp and Paper Co., 748 Public Ledger Bldg., Philadelphia, Pa. Sec. (Western Pennsylvania), L. S. Morgan, State Dept. of Health, Greensburg, Pa.

***Oct. 22-23—Northampton, Mass.**
Massachusetts Federation of Planning Boards. Annual Convention (Hotel Northampton). Clerk, Miss M. T. Downey, Room 43, City Hall, Boston, Mass.

Oct. 24-26—Jefferson City, Mo.
American Water Works Association—Missouri Section and Missouri Water & Sewage Conference. Annual Convention (Hotel Governor). Sec.-Treas., Warren A. Kramer, Div. of Health, State Office Bldg., Jefferson City, Mo.

Oct. 25-26—Richmond, Va.
American Water Works Association—Virginia Section. Annual Convention (Hotel John Marshall). Sec.-Treas., W. H. Shewbridge, State Office Bldg., Richmond 22, Va.

Oct. 25-29—State College, Pa.
Pennsylvania State College Water Works Operators School. Exec. Dir., R. E. Stiemke, Professor, Sanitary Engineering, State College, Pa.

Oct. 27-29—Riverside, Calif.
American Water Works Association—California Section. Annual Meeting (Hotel Mission Inn). Sec., H. C. Medbury, Water Dept., 425 Mason St., San Francisco 2, Calif.

Oct. 28-29—La Crosse, Wis.
American Water Works Association—Wisconsin Section. Annual Convention (Hotel Stoddard). Sec., Leon A. Smith, Supt. Water Works, City Hall, Madison, Wis.

Oct. 28-30—Quincy, Ill.
Illinois Association of Park Districts. Annual Convention (Hotel Lincoln Douglas). Exec. Sec., Marjorie M. Dickinson, 621 E. Capitol Ave., Springfield, Ill.

Nov. 1-3—Ottawa, Ontario
Canadian Institute on Sewage and Sanitation. Annual Meeting (Hotel Chateau Laurier). Sec.-Treas., A. E. Berry, Dept. of Health, Parliament Bldg., Toronto, Ont.

***Nov. 4-5—Edgewater Park, Miss.**
Southeastern Association of State Highway Officials. Annual Meeting (Hotel Edgewater Beach). Sec.-Treas., A. Reese Harvey, Alabama State Highway Dept., Montgomery, Ala.

Nov. 4-6—Atlantic City, N. J.
American Water Works Association—New Jersey Section. Fall meeting (Hotel Madison). Sec., C. B. Tygert, Box 178, Newark 1, N. J.

Nov. 8-10—Asheville, N. C.
American Water Works Association—North Carolina Section, and North Carolina Sewage Works Association. Annual Convention (Hotel George Vanderbilt). Sec.-Treas., George S. Moore, P. O. Box 125, Albemarle, N. C.

Nov. 8-10—Atlantic City, N. J.
New Jersey State League of Municipalities. Annual Conference (Hotel Chalfonte-Haddon Hall). Exec. Sec., James J. Smith, 1212 Trenton Trust Bldg., Trenton, N. J.

Nov. 8-12—Boston, Mass.
American Public Health Association. Annual Meeting. Exec. Sec., Dr. Reginald M. Atwater, 1790 Broadway, New York 19, N. Y.

Nov. 9-12—Miami, Fla.
International Association of Fire Chiefs. Annual Convention (Hotel Everglades). Sec.-Treas., Chief Daniel B. Tierney, 8 Robbins Road, Arlington, Mass.

Nov. 10-12—St. Louis, Mo.
Missouri Municipal League. Annual Convention (Hotel Chase). Exec. Dir., Bruce J. Carl, Columbia, Mo.

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Nov. 11-12—Berkeley, Calif.
Western Governmental Research Association. Annual Conference (Hotel Claremont). Exec. Sec., John C. Bollens, 117 University Library, Berkeley 4, Calif.

***Nov. 16—New York, N. Y.**
Regional Plan Association, Inc. Annual Conference (Hotel Roosevelt). Exec. Vice-Pres., C. McKim Norton, 205 E. 42nd St., New York 17, N. Y.

Nov. 18-19—Augusta, Maine
Maine Municipal Association. Annual Convention (City Hall). Exec. Sec., Leigh Webber, 97 Water St., Hallowell, Maine.

Nov. 18-19—Milwaukee, Wis.
League of Wisconsin Municipalities. Annual Convention (Hotel Schroeder). Exec. Sec., Frederick N. MacMillin, 30 E. Johnson St., Madison 3, Wis.

Nov. 18-20—Eugene, Ore.
League of Oregon Cities. Annual Convention. Exec. Sec., Herman Kehrli, Bureau of Municipal Research, University of Oregon, Eugene, Ore.

Nov. 18-20—Panama City, Fla.
American Water Works Association—Florida Section. Annual Convention (Hotel Dixie Sherman). Sec., S. K. Keller, Box 510, Clearwater, Fla.

Nov. 22-24—Boston, Mass.
National Municipal League. National Conference (Hotel Statler). Exec. Sec., Alfred Willoughby, 299 Broadway, New York 7, N. Y.

***Nov. 29-30—Phoenix, Ariz.**
Arizona Municipal League. Annual Meeting (Hotel Adams). Exec. Sec., Joseph C. Furst, 15 South First Ave., Phoenix, Ariz.

Dec. 2-4—Washington, D. C.
National Institute of Municipal Law Officers. Annual Conference. Exec. Dir., Charles S. Rhyne, 730 Jackson Place, NW., Washington, D. C.

Dec. 6-8—Augusta, Ga.
American Water Works Association—Southeast Section. Annual Meeting (Hotel Sheraton Bon-Air). Exec. Sec., W. T. Linton, Principal Sanitary Engineer, 433 Wade Hampton Bldg., Columbia, S. C.

Dec. 6-10—Washington, D. C.
Highway Research Board. Annual Meeting (Building of National Academy of Sciences—National Research Council). Dir., Roy W. Crum, 2101 Constitution Ave., Washington 25.

Dec. 8-11—Chicago, Ill.
American Public Welfare Association. Annual Meeting (Hotel Edgewater Beach). Dir., Howard L. Russell, 1313 E. 60th St., Chicago 37, Ill.

Dec. 13-15—Washington, D. C.
American Municipal Association. Annual Convention (Hotel Statler). Exec. Dir., Earl D. Mallery, 522-526 Transportation Bldg., 17th and H Sts., NW., Washington, D. C.

***Dec. 15-17—New York, N. Y.**
Tax Institute, Inc. Annual Meeting (Hotel Pennsylvania). Exec. Dir., Miss Mabel L. Walker, 150 Nassau St., New York 7, N. Y.

Jan. 19-21—New York, N. Y.
American Society of Civil Engineers. Annual Meeting (Hotel Commodore). Sec., William N. Carey, 33 W. 39th St., New York, N. Y.

***Feb. 28-March 3—New York, N. Y.**
The Associated General Contractors of America. Annual Convention (Hotel Waldorf-Astoria). Mng. Dir., H. E. Foreman, 1227 Munsey Bldg., Washington 4, D. C.

***March 1-3—Boston, Mass.**
Association of Highway Officials of the North Atlantic States. Annual Meeting (Hotel Statler). Sec.-Treas., A. Lee Grover, State House Annex, Trenton, N. J.

***March 10-12—Richmond, Va.**
American Concrete Pipe Association. Annual Convention (Hotel John Marshall). Mng. Dir., H. F. Peckworth, 228 N. LaSalle Street, Chicago, Ill.

Good Citizenship Awards
For Noteworthy Public Service

ON AUGUST 18 a large delegation of Veterans of Foreign Wars suddenly appeared at the regular meeting of the Mayor and Council of the Borough of Sayreville, N. J., held in the Municipal Building. They were there not to request action on any special municipal project in which veterans might be interested, nor to lodge protest against any of the governing body's previous actions. They were there to present Mayor Philip McCutcheon with a "Good Citizenship Award" for his many contributions to the civic welfare.

During the ceremonies, Jesse Wolff, commander of the local VFW Post, told Mayor McCutcheon, "The 'Good Citizenship Award' from the national VFW is based on outstanding work towards veterans, youth, and the community at large, a qualification which you have more than fulfilled. The part you took in the erection of the World War II memorial and the development of the War Memorial Park are well known, while for youth you have been instrumental in the organization of the Youth Guidance Council, the Youth Canteen, and many other factors which have rendered juvenile delinquency in the borough non-existent."

Another speech pointed out that the award was made because of the many things the Mayor had done in the public interest, and especially because they were done for other than political reasons.

Long and loyal devotion to the public service is all too rarely given recognition such as was shown in Sayreville. The Citizens League of Cleveland is one organization that recently created a systematic program of annual commendations of public officials for outstanding public service. In Detroit a different approach developed last year when an anonymous donor gave $2,500 to establish the Detroit Civic Award.

The Bureau of Governmental Research evolved a plan for a contest with prizes to be given the city and school employees of Detroit who submitted the most meritorious suggestions or plans for improvement in the efficiency and economy of any municipal service function or organization. The Grand Award was $500, the First Award was $350, and there were 84 other prizes set up. Response to the contest was excellent and a total of 1,079 suggestions were submitted. These are already resulting in substantial improvement and economy. For example, city officers have estimated an annual saving of $150,000 as a result of the Grand Award plan alone, which is a proposal for centralized purchasing, inspection, storage, and handling of the coal used by all city departments. Because of the contest's success, it is possible that the city itself will sponsor one next year.

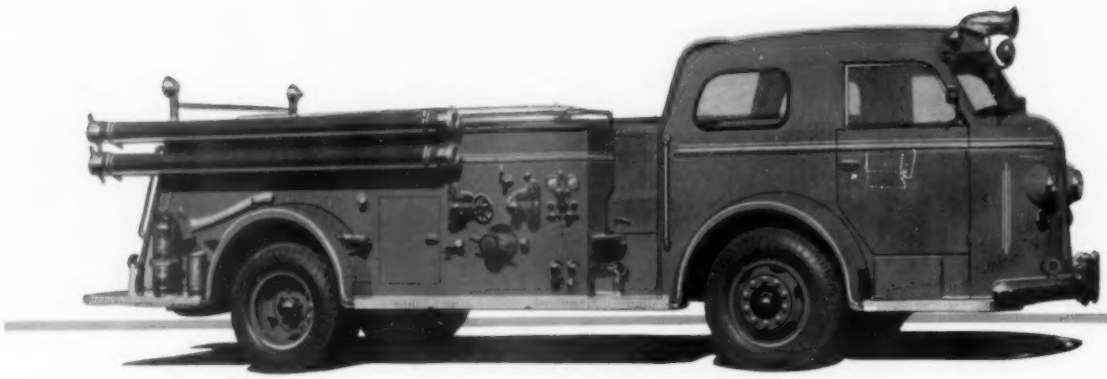
Rewarding public service and incentive, as illustrated by the varying approaches of Sayreville, Cleveland and Detroit, cannot but help to stimulate the improved operation of municipal government. It is to be hoped that the use of such awards and commendations for local government work will become more widespread.

What to Do About Sewer Infiltration

INFILTRATION in the average sewer, says I. Russell Riker, Borough Engineer of Princeton, N. J., should be no more than 5,000 gallons per mile per day in high ground, and 10,000 gallons in low. Mr. Riker set this standard (2 to 3 gallons per lineal foot of pipe joint) at the annual meeting of the New Jersey Sewage Works Association that was held recently in Trenton. He mentioned the limits of 20,000 to 30,000 gallons per mile set by others, and the cost of pumping and treating such large flows.

There are several ways to keep these excess flows, which need no treatment, from finding their way into the plant. One is by ordinance that prohibits the connection of house leaders and cellar drains to sanitary sewers. Another is to inspect manholes for leaks. Still another is to provide storm drainage where the water level is high. Careful inspection of sewer installation and backfill provides still another.

When laying the pipe, careful bedding with space provided for each bell hole goes a long way towards eliminating future difficulties. When excavating in rock, Mr. Riker recommended always excavating 4 inches below grade, and then carefully tamping back the required amount of gravel or crushed stone. When testing a new line for infiltration, he cautioned that the test should be made when the groundwater is high. This occurs in the spring and early summer in Princeton.



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Municipal and Civic Publications

Le Corbusier Planning Theories

CONCERNING TOWN PLANNING—*By Le Corbusier. Translated by Clive Entwistle. Yale University Press, New Haven, Conn.* 1948. 127 *pp.* $2.75.

As one of the most prominent figures in contemporary architecture and town planning, Le Corbusier's influence has made itself felt throughout the world. Unfortunately, until the publication of this book, it has been difficult for American planners to get at the exact nature of his town-planning theories.

This book is an integrated expression of the Le Corbusier town-planning philosophy. It will be found both direct and imaginative. It is direct because of the listing of 18 provocative questions together with their answers on town-planning principles. It is imaginative and ingenious because of the more than 60 line drawings which illustrate the author's theories. The reader will be interested to note the degree to which Le Corbusier's once revolutionary ideas have been accepted in current progressive planning theory and practice.

Discussion Groups Analyzed

THE DYNAMICS OF THE DISCUSSION GROUP—*"The Journal of Social Issues," Spring* 1948. *Published quarterly for the Society for the Psychological Study of Social Issues by the Association Press, 347 Madison Ave., New York 17, N. Y. 75 pp. Single copy, 75 cents; annual subscription,* $2.50.

This is a progress report on a social experiment aimed at exploring the ways of integrating research in social psychology, adult education in human relations, and the strategy and tactics of democratic group action. The focus of attention is the dynamics of the face-to-face adult discussion group, and the relationship of the individual to such a group and the relationship of such a group to the larger social environment of the organization and community.

Civic leaders who often rely on group discussion methods should find the concepts of "feedback" and "group self-evaluation" described in the *Journal* of much value in helping to further the productivity of their groups.

Detroit Cultural Center

PROPOSED CULTURAL CENTER PLAN—*Detroit City Plan Commission, Griswold Building, 1214 Griswold St., Detroit, Mich. Master Plan Report No. 7. April* 1948. 28 *pp.*

This attractive booklet outlines the proposed coordination of eight separate cultural projects so that they will fit into one integrated grouping of buildings near the population heart of the city. The proposals involve ultimate construction of an adequate campus for Wayne University, the Detroit Historical Museum, the International Institute, and of a Museum of Natural History, a Museum of Anthropology, a Planetarium, an addition to the Public Library, and an addition to the Institute of Arts.

Prefabricated Houses

PREFABS ON PARADE—*The Housing Institute, Inc., 527 Fifth Ave., New York 17, N. Y.* 1948. 112 *pp.* $2.00.

This entire publication is devoted to illustrations, descriptions, and floor plans of prefabricated houses now on the market, together with a list of prefabricators and their addresses. Prefabricated methods are described briefly, progress photographs are included showing the stages in assembling a completely prefabricated house, and there is a short section on the importance of proper subdivision planning. Local building officials and others may find the volume of value as a reference guide.

Organization Directory

PUBLIC ADMINISTRATION ORGANIZATIONS—A DIRECTORY, 1948—*Laverne Burchfield, Editor. Public Administration Clearing House, 1313 E. 60th St., Chicago 37, Ill.* 216 *pp.*

The sixth edition of Public Administration Organizations presents a directory of voluntary unofficial organizations in the field of public administration or in related fields in the United States and Canada.

The organizations are classified as organizations of or for public officials and administrators, professional and technical societies, and citizen organizations. Within this category are the national, state, regional, and Canadian organizations. Accompanying the name of the organization is information concerning membership, finances, secretariat, affiliation, and publications.

Traffic Control Manual

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS—Prepared by the *Joint Committee on Uniform Traffic Control Devices. Published by the Public Roads Administration of the Federal Works Agency. Government Printing Office, Washington 25, D. C.* 1948. 50 *cents.*

This is a completely new edition of the manual, which has been the generally recognized official national standard covering highway signs, pavement markings, traffic signals, islands, and similar devices used in the guidance, warning, and regulation of traffic. The Joint Committee includes representatives of the American Association of State Highway Officials, the Institute of Traffic Engineers, and the National Conference on Street and Highway Safety (now the National Committee on Uniform Traffic Laws and Ordinances). Superseding editions of 1935 and 1942, the new manual represents a four-year effort of the Joint Committee and its staff. While basic standards generally remain unchanged, many refinements and some significant revisions have been made.

Technical Services Guide

TECHNICAL SERVICES TO VIRGINIA GOVERNMENT, A DIRECTORY OF AGENCIES PROVIDING ASSISTANCE TO STATE AND LOCAL GOVERNMENTS—*By Anne Page Brydon, Bureau of Public Administration, University of Virginia, Charlottesville, Va.* 1948. 226 *pp.*

Another in the very excellent series of directories issued as a result of the cooperative program of the Southern Regional Research Committee in Public Administration. The Universities of Alabama, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia have all prepared volumes of this type after coordinating their studies and assisting each other in many ways.

National, state and local agencies—both official and unofficial—are listed, together with descriptive statements of their work and staff. The volume should be of great aid to public officials in Virginia as a guide to the variety of technical services available to them from many sources.

Organizing Recreation In Indiana

IT'S ABOUT TIME—A GUIDE FOR COMMUNITY RECREATION IN INDIANA—*Indiana Economic Council, Board of Trade Bldg., Indianapolis, Ind. Bulletin No. 10. June* 1948. 16 *pp.*

This very striking bulletin is directed to civic leaders in Indiana communities. It includes such useful information as the purposes of a recreation program, facilities that can be utilized, qualifications of a recreation director, methods of financing the program, sources of recreation assistance, and various recreation laws. The colorful illustrations make the presentation both unique and interesting

Inspiring New Textbook For Atlanta's Students

BUILDING ATLANTA'S FUTURE—*By John E. Ivey, Jr., Nicholas J. Demerath, Woodrow W. Breland. University of North Carolina Press, Chapel Hill, N. C.* 1948. 305 *pp.* $3.50.

This is probably the outstanding text on a city's development, growth, and improvement needs to have been published for community-school use. It represents a special project carried out by the Division of Research Interpretation of the Institute for Research in Social Science at the University of North Carolina. The book is tailor-made for Atlanta with the cooperation of the city's Board of Education and an Advisory Committee, but its lessons are applicable to other large urban communities, and it suggests a basis of citizenship for every city dweller.

Building Atlanta's Future, which will be used at the eighth-grade level in the new community-school program in Georgia's capital city, is designed to associate intimately the youth of the city with its historical, regional, economic, and sociological aspects. Amply and attractively illustrated, and with easy-to-read text material, the book covers the city's problems in a comprehensive and fascinating manner. Unlike most textbooks, the material is made to relate directly to the student and his community, and, except for negligible mention of the Negro's place in Atlanta, it makes every effort to be "meaty" and realistic.

The book gives considerable attention to Atlanta in its regional setting, as well as to the importance of proper land use in the area. Every aspect of the city's services and operation is made clear in the section, "Meeting Group Needs," which also explains such concepts as the "garden city" idea and the "neighborhood approach."

The concluding section, "Guiding City Growth" is a masterful presentation in simple terms of the community-planning process and how it can be effectuated. The volume certainly offers a wealth of suggestions and inspiration for possible use in the education programs of other cities.

South Dakota's Manager Experience

CITY MANAGER GOVERNMENT IN SOUTH DAKOTA—*By W. O. Farber. The Governmental Research Bureau, University of South Dakota, Vermillion, S. D. Report No. 17. June* 1948. 48 *pp.*

When manager government was established in Clark, S. D., in 1912, the city became one of the first in the United States to adopt this form of government.

This report gives an interesting account of the evolution of city-manager legislation in South Dakota and the progress of the five cities, including Clark, which have had or currently have managers.

There is, in addition, an appendix containing the South Dakota Code Provisions and listing publications on city manager government.

Municipal Noise Control

MUNICIPAL CONTROL OF NOISE—SOUND TRUCKS—SOUND ADVERTISING AIRCRAFT—UNNECESSARY NOISES—MODEL ANNOTATED ORDINANCES—*By Charles S. Rhyne, General Counsel, National Institute of Municipal Law Officers, 730 Jackson Place, NW., Washington 6, D. C. Report No. 123* 1948. 43 *pp.* $3.00 *to non-members.*

A study of past court decisions concerning municipal control of noise. In addition, there are model ordinances for future use by municipalities based on these decisions. The model ordinances are so constructed that they can be adjusted to the various laws already enacted in different cities.

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Conurbation—A British Industrial Area Survey

CONURBATION, A SURVEY OF BIRMINGHAM AND THE BLACK COUNTRY—*By the West Midland Group. The Architectural Press, 9-13 Queen Anne's Gate, London, S.W. 1, England.* 1948. 285 *pp.* 30 *shillings, net.*

This is certainly one of the most ambitious, imaginative, and comprehensive regional studies to be published since the days of the National Resources Planning Board. "Conurbation" is defined in the book as an area of continuous urban development which includes and connects two or more towns. The study is of Birmingham and the Black Country, an area covering 270 square miles, blighted by a century-and-a-half of unplanned industrial development.

The West Midland Group on Post-War Reconstruction and Planning, a private body which carried out the study, is composed of local officials, industrialists, and members of the staff of the University of Birmingham. Not only are the Birmingham-area problems surveyed and approached from many points of view, but suggestions are made as to how "redevelopment within a green setting" can proceed in this seemingly hopeless situation. There are many lessons for blighted American industrial areas in this study.

Conurbation surveys the main features of the present make-up of the Birmingham area, its population, its industrial structure, the uses of its land, the condition of its houses and factories, its system of local government. It presents material facts, logical conclusions, and social purposes which can form the foundation of planned action to improve the material well-being of the people and the industry upon which they depend.

The maps and charts in the book—many of them in color—are designed to present the material collected by the Survey in a clear and comprehensible form to a wide public, so that future plans for the area can be formulated in the atmosphere of an informed public opinion based on the facts relevant to planning. The book's many photographs are especially illuminating, such as the ingenious four-page series of strips entitled "Through the Carriage Window: From Birmingham to Wolverhampton By Rail."

As pointed out by Lewis Mumford in his foreword, the book is a tribute to the British "civic probity and courage that will transform the old handicaps into fresh opportunities." The question is raised as to why, with the wealth and resources existing in the United States, studies of the caliber and standard of *Conurbation* are non-existent here.

Philosophy of Form

SEARCH FOR FORM—*Eliel Saarinen. Reinhold Publishing Corporation, 330 W. 42nd St., New York, N. Y.* 1948. 354 *pp.* $4.50.

This book by a distinguished architect and planner is devoted to philosophical discussions of the search for form in art and architecture appropriate to our own times. Today, at 75, Mr. Saarinen in looking back upon his 50-year career has seen many of the once radical ideas for which he and his contemporaries fought and pioneered come to be generally accepted. The book contains little of "practical" value for municipal administrators and planners, but will interest many readers as a further development of the Saarinen philosophy.

Citizenship Clearing House

THE CITIZEN'S PARTICIPATION IN PUBLIC AFFAIRS—*A Conference Inaugurating the Citizenship Clearing House at the New York University School of Law. Published by the New York University School of Law, January* 1948. 176 *pp.*

These conference proceedings contain excellent discussions on how citizens can and should participate in local government by a variety of authorities and experts in the field. The Citizenship Clearing House, as a division of the New York University Law School, will seek to promote good citizenship among young college students and stimulate them to get started in politics.

Philadelphia Population Estimates

POPULATION ESTIMATES, 1950-2000, *Philadelphia-Camden Area—Philadelphia City Planning Commission, Market Street National Bank Building, Philadelphia 7, Pa. Planning Study No. 1. April* 1948. 20 *pp.*

This report on a statistical projection of past trends of growth of the Philadelphia-Camden Industrial Area is the first of a series of technical reports on population, social, economic, and geographic factors affecting planning for Philadelphia and its region. The report is an estimate of what the future population would be, to the year 2000, if past trends continue.

The population of the eight-county area is estimated to reach its maximum growth of approximately 3,943,000 by 1980, an increase of 23% over that of 1940. Most of the increase is expected during the next two decades.

Washington Planning Problems

PLANNING AS A SOLUTION TO STATE AND LOCAL PROBLEMS—*Bureau of Governmental Research and Services, University of Washington, Seattle 5, Wash. Report No. 83. January* 1948. 78 *pp.*

The proceedings of the section on planning of Washington's 12th Annual Institute of Government are contained in this report. The excellent, "meaty" discussions revolve about planning problems of Washington municipalities, and how they can be approached and solved. The report concludes with statements on the need for a state planning association which would help service and provide information for local planning commissions. Organizational procedures for such a body were set in motion at the meeting. It is expected that action will result soon.

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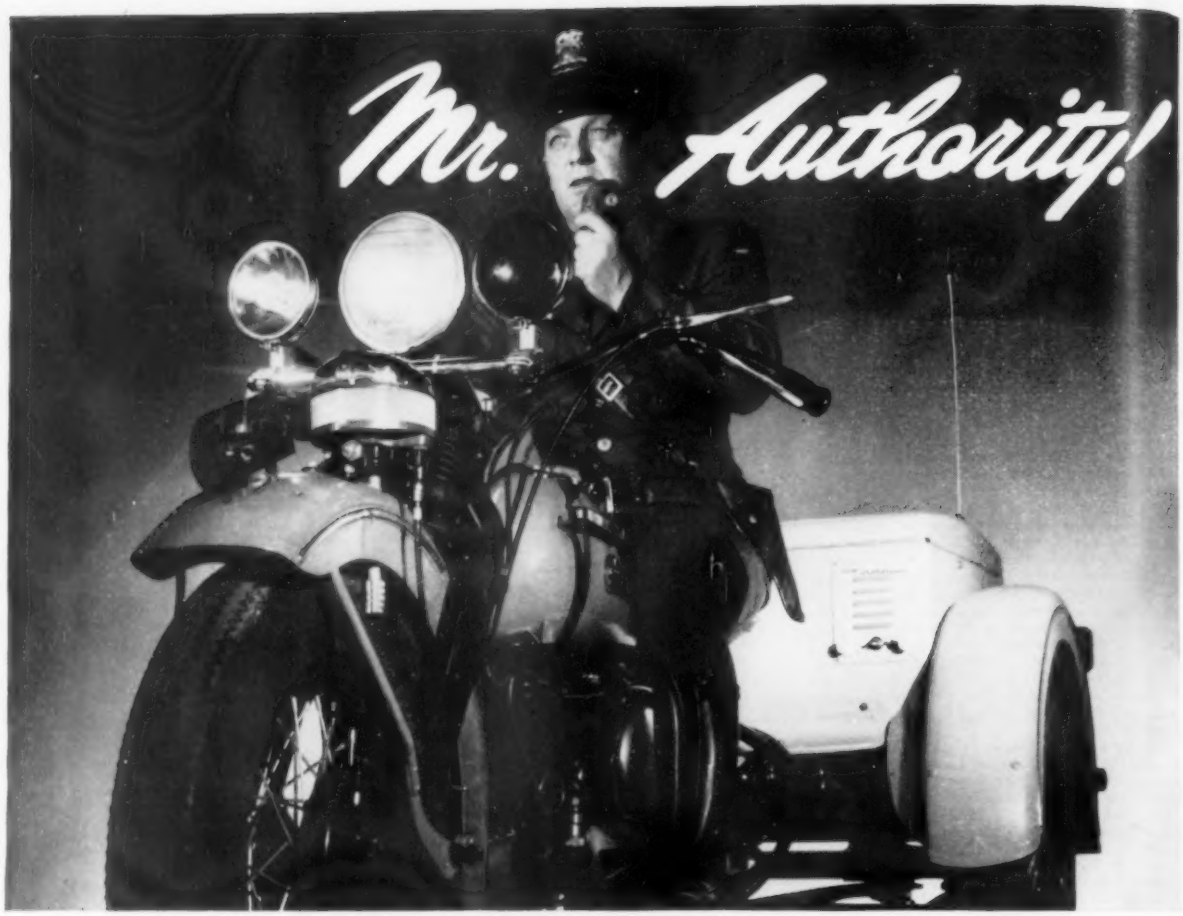

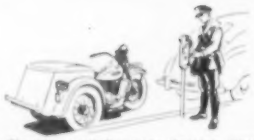
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Housing Developments in 1947

SUMMARY OF THE 1947 HOUSING YEAR AND BIBLIOGRAPHY OF 1947 HOUSING LITERATURE—*National Association of Housing Officials, 1313 E. 60th St., Chicago 37, Ill. May 1948. 22 pp.* $1.00.

An excellent concise summary of housing developments in 1947, which gives facts and figures on housing production of various types, and traces the increasing participation of both states and local governments in the housing field during the year. The booklet is a preprint of a section appearing in the *Municipal Year Book* 1948, published by the International City Managers' Association.

Planning Board Functions

WHAT THE PLANNING BOARD SHOULD DO—*By Hugh R. Pomeroy, Director, Department of Planning, Westchester County, County Office Bldg., White Plains, N. Y. 1948. Mimeo. 23 pp. Limited number of copies available to municipal officials upon request.*

A penetrating and skillful analysis of the work of local planning boards and what they should be doing. The outline presents a deep-rooted philosophy of the objectives of planning and the elements of a planning program. Describing briefly the statutory powers of local planning boards in New York State, the report aims at increasing their effectiveness, the scope of their programs, and their liaison with existing citizens' community groups. Statements of specific objectives together with questions about "what can the planning board do about it?" are presented for the following subjects: housing, schools, parks and recreation, neighborhoods, business district, residential districts, thoroughfares, transit, airports, utilities, public buildings, economic development, and appearance of the community.

New York City Zoning

ZONING IN NEW YORK—*By Latham C. Squire. Home Title Guaranty Company, New York, N. Y. 1948. 95 pp.* $4.00.

Publication of this treatise on the Zoning Resolution and applicable sections of the Multiple Dwelling Law of New York is timely because it helps to focus attention on the inadequacy of the city's existing zoning measures. It helps to clarify and interpret the many complicated provisions for the primary use of architects, builders, lending institutions and others. It should be of most value, however, to those working on the broad and comprehensive study looking to a general revision of New York's Zoning Resolution. Future editions will deal with the major changes expected to evolve.

Bar Harbor Plan

PRELIMINARY REPORT ON THE TOWN PLAN, BAR HARBOR, MAINE—*Harland Bartholomew and Associates, 317 North Eleventh St., St. Louis 1, Mo. July 1948. Illus. 41 pp.*

This report, prepared for the Town Planning Board of Bar Harbor, is meant to serve as a guide for the development of the community following the disastrous fire of October 17, 1947. The fire burned 55% of the area of the town, and 23% of the land area on the island on which the town is situated.

The report recommends that Bar Harbor should be developed primarily as the center for a summer colony and that it should be planned for a permanent population of about 4,500 persons. Although the report presents a comprehensive plan for the community's improvement, it outlines the financial difficulties of carrying out the recommendations presented. It urges the acquisition of land in the burned-over area that will be needed for future public improvements, even though none may be undertaken for six to eight years. It also urges public understanding and review of the plan by both year-round and summer residents as being essential before any of the suggestions are adopted.

City Government Employment

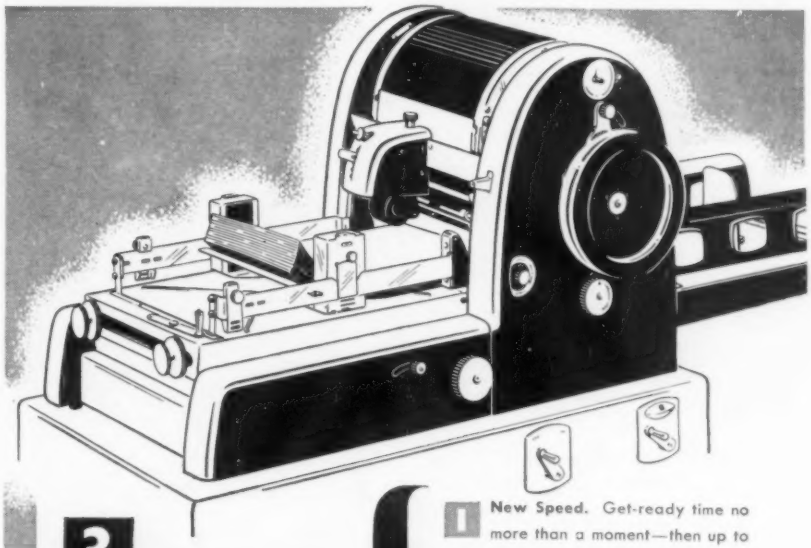
CITY EMPLOYMENT IN 1947—*Government Employment, June 1948. Bureau of the Census, Department of Commerce, Washington 25, D. C. 38 pp.*

The number of city employees rose 4% between October 1946 and October 1947, according to this report, while the total amount paid them by the cities rose 15%. This is the first census report dealing specifically with city government employment that includes data on teachers and other personnel of city-operated schools. In October 1947, the school function of city government accounted for about 17% of all city employees and about 23% of total city pay rolls. The tables in this report break down the data for individual cities of over 10,000, and offer a sound basis for comparative studies in this field.

Traffic Services Available

TRAFFIC SERVICES FOR PUBLIC OFFICIALS—*International Association of Chiefs of Police Traffic Div. and Northwestern University Traffic Institute, 1704 Judson Ave., Evanston, Ill. 1948. 36 pp. Single copies upon request.*

The purpose of this brochure is to inform officials of both public and private agencies of the assistance available from the International Association of Chiefs of Police Traffic Division and the Northwestern University Traffic Institute. These organizations will, upon request, appraise the traffic control problems of municipalities or states on a non-profit basis. The brochure covers the field service, training, research, publications and graduate assistance activities of the two organizations, and also contains photographs and biographical sketches of staff members.



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1948 Government Manual

United States Government Manual, 1948 edition—Division of the Federal Register, the National Archives, Washington, D. C. Order from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. 722 pp. $1.

The United States Government Manual covers the creation, organization, functions, and activities of all branches of the Federal Government, and includes the names and titles of the administrative officials. It contains a literal print of the Constitution of the United States, its signers and amendments; a discussion of the powers of Congress and the enactment of laws; a list of Senators and Representatives; a section on the courts, and comprehensive statements on the nine executive departments, the Federal Security Agency, the Federal Works Agency, and the independent establishments. Field offices and addresses are listed for many of the departments and agencies.

A list of several hundred representative publications shows the types of published material available from government establishments. Statements on the United Nations, the International Bank for Reconstruction and Development, the International Monetary Fund, and related organizations appear in this 1948 edition.

Washington Laws On Sewers Compiled

Laws Relating to Sewers and Sewage Treatment for Cities and Towns and Sewer Districts—*Bureau of Governmental Research and Services, University of Washington, Seattle, Wash., in cooperation with Washington State Department of Health. Report No. 87. May 1948. 92 pp.*

The current demand for information on laws relating to sewers and sewage-treatment plants has been met in the State of Washington by this publication. It is the type of project which municipal officials in other states would find of value, especially as so many are now undertaking public-works construction programs which were delayed during the war.

Intergovernmental Fiscal Relations Abroad

Division of Work Between the Central and Local Governments and Rules for Grants-in-Aid to Local Governments in Norway, Sweden, England and Wales, and Holland—*By Kjeld Philip. Bureau for Research in Municipal Government, Harvard Graduate School of Public Administration, Cambridge, Mass. February 1948. 63 pp.* $2.00.

This document helps explain the division of responsibility and finances of the various countries covered, thereby offering some ideas and suggestions for possible further study and adoption in the field of intergovernmental fiscal relations in the United States.

Community Social Work

Social Group Work—Principles and Practices—*By Harleigh B. Trecker. The Woman's Press, 600 Lexington Ave., New York 22, N. Y. 1948. 313 pp.* $3.50.

An introduction to group social work. The study is well organized and presents the various problems a group worker faces as she progresses in the field. Part One, the theory of social group work, is supplemented in Part Two by concrete illustrations taken from actual records.

Municipal officials will be interested in the description of social group work as an integral part of every community.

Highway Users Conference

Better Highway Transportation for Better Living—*Proceedings of the Second Highway Transportation Congress. National Highway Users Conference, National Press Bldg., Washington 4, D. C. 1948. 63 pp.* $1.00.

Discussions of highway usage, planning, and construction are contained in these proceedings, including a talk on "The Role of Motor Transportation in the National Defense," by Arthur M. Hill, chairman, National Security Resources Board.

State Research Compendium

Compendium of State Research Activities—*By Maryland State Planning Commission, 100 Equitable Bldg., Baltimore 2, Md. Publication No. 54. 1948. 46 pp. 15 cents.*

A valuable inventory of research projects currently being conducted by Maryland agencies in behalf of the state and/or its political subdivisions. The report is divided into two parts: non-university investigations, and research at the colleges and professional schools of the state university. Brief descriptions are included of each project, together with publication plans for the results.

The compendium, which will be brought up to date each year, should help to stimulate interchange of information and joint endeavors among the state agencies. It is to be hoped that future editions will also include reports on research being conducted by citizens' groups and other unofficial bodies.

British Planning Annual

Planning and Construction, 1948—*F. J. Osborn, Advisory Editor. Todd Reference Books Limited, 49 Park Lane, London W1. 372 pp. 25 shillings net.*

This is the fifth annual edition of the comprehensive British reference book covering developments in the planning field. The book is divided into 13 sections and contains thoughtful articles on planning legislation and policy, as well as directories of and statements by government, public, and private bodies and organizations concerned with planning and construction. Reports are given on the work of a wide number of officially appointed committees, and on actual area and city replanning efforts that are under way. Useful statistics and tables, a remarkably complete bibliography on British books, periodicals and films related to planning, and a list of "Who's Who in Planning and Construction" serve to make the volume of maximum value to those interested in British developments.

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Powerful air cooled engine—exceptional job safety—perfect balance—perfected level winder—back-lash pulley—instant leg adjustment—safe speeds up to 125 ft. per minute—these are but a few of the characteristics of the work-proven "Flexible" Power Bucket Machine.

Ask the distributor nearest you for more details on this and other cost-saving, time-saving "Flexible" equipment.

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The *performance* of Automaton is years ahead of any other automatic parking meter because Automaton winds itself! Other automatic parking meters must be wound by the city, at the city's continuous expense. But Automaton, and *only* Automaton, actually winds itself!

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Before you make a decision . . . be sure to see AUTOMATON . . . . America's finest automatic parking meter.

Orders are being filled as rapidly as possible. We urge you to make your reservation now for early delivery.

CLIP COUPON AND MAIL TODAY!

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Gentlemen: Please send full details of AUTOMATON. We are interested in: On-street parking ☐ Off-street parking lots ☐ Both ☐ Please include information about your FREE parking survey ☐

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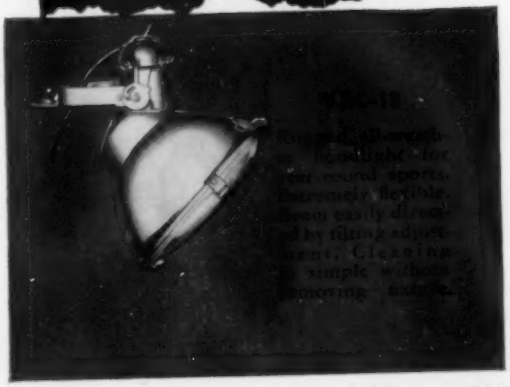
Don't let darkness rob the people in your community of the chance to play. Give them the opportunity to get healthful recreation, long after sundown, with planned floodlighting.

The results can be far-reaching: Juvenile delinquency reduced, health standards improved, community spirit raised.

A Westinghouse Lighting Sales Engineer will be glad to help you plan a layout for your recreation areas. His services are available through your Westinghouse distributor. *He will gladly co-operate with you, your local utility and electrical contractor in the development of a plan.* J-04188



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State and Local Tax Report

THE MINNESOTA TAX SYSTEM—*The Minnesota Institute of Governmental Research, Inc., 702-704 Empire Bank Building, Saint Paul 1, Minn. State Governmental Research Bulletin, May* 1948. 140 *pp.* $1.00.

A comprehensive report which discusses state and local tax sources and their interrelationships. The report offers comparisons with other states, and contains excellent comments evaluating the worth of specific revenue measures and their effect on people and industry within the state. Discussions of the mining taxes will be found especially interesting. There are excellent charts, maps and tables that do much to point up the sections in the text.

Virginia Planning Outline

A BRIEF INTRODUCTION TO PLANNING AND ZONING IN VIRGINIA—*Virginia State Planning Board, 301 State Finance Bldg., Richmond* 19, *Va.* 1947. 12 *pp. Additional copies available for distribution.*

This pamphlet briefly explains local planning and zoning in Virginia, and basic questions concerning these two subjects are answered. Public participation is emphasized and methods for arousing interest in planning programs are described. There is included, also, a list of Virginia planning and zoning legislation.

Other states could well emulate the State of Virginia in enlightening their citizens with such a handy publication on the framework of planning and zoning.

Traffic Agency Liability

THE LEGAL RESPONSIBILITIES OF TRAFFIC AGENCIES—*By C. H. Belser. The Eno Foundation for Highway Traffic Control, Saugatuck, Conn.* 1948. 64 *pp.*

A discussion for those charged with traffic management of what sorts of acts or omissions in this field have resulted in damage suits, and what sort of court decisions have been handed down. The cases cited generally indicate the modern tendency to extend rather than restrict the doctrine of municipal liability. This makes it clear that cities cannot "flaunt scientific traffic safeguards and experiments with untried devices of untrained, unskilled, and unqualified men in this field," in the words of Justice McGeehan, one of whose case decisions is cited in this report.

Mayor Upholds Los Angeles Zoning

VETO MESSAGE AND BROADCAST BY MAYOR FLETCHER BOWRON OF THE CITY OF LOS ANGELES OPPOSING RELAXATION OF ZONING DENSITY REQUIREMENTS—*American Institute of Planners, 77 Massachusetts Avenue, Cambridge* 39, *Mass. Mimeo.* 1948. 17 *pp.*

Presenting a forceful and constructive position on an issue of considerable importance, this message by Mayor Bowron vetos an ordinance which would have removed density restrictions in the least restricted residential zone and lowered them materially in two other multiple residence zones. The transcript of the broadcast by Mayor Bowron urges the people of Los Angeles to resist the proposed zoning change and explains his reasons for vetoing the ordinance.

Planning and Housing Reports

DENVER, COLO.—Denver Metropolitan Area Conference. City and County of Denver, Council Chambers, City and County Bldg., Denver, Colo. Feb. 1948. 24 pp.

KANSAS—Commercial and Industrial Buildings in Kansas. By Arnold E. Warger. Kansas Industrial Development Commission. June 1948. Tables. Mimeo. 71 pp.

MARIN COUNTY, CALIF. — Triennial Report. Marin County Planning Commission, 1711 Grand Ave., San Rafael, Calif. 1947. Charts. Tables. Maps. Illus. 15 pp.

NEW YORK, N. Y.—New York City Housing Authority, 14th Annual Report, 1948. New York City Housing Authority, 122 E. 42nd St., New York 17, N. Y. Charts. Tables. Illus. 23 pp.

ONTARIO, CANADA—Memorandum of Procedure with Respect to the Application of Approval of Plans of Subdivision. Ontario Dept. of Planning and Development. Dec. 15, 1947. Map. 11 pp.

PHILADELPHIA, PA.—Our City Today and Tomorrow. Redevelopment Authority of Philadelphia, Board of Education Bldg., Twenty-first and The Parkway, Philadelphia, Pa. Table. Illus. 11 pp.

SAN MATEO COUNTY, CALIF.—Shoreline and Recreation. San Mateo County Planning Commission, Court House, Redwood City, Calif. 1947. Maps. Illus. 18 pp.

TACOMA, WASH. — Site-History-Population. A Preliminary Report. City Planning Commission. May 1948. Charts. Tables. Maps. 45 pp.

TACOMA, WASH.—Outline of a Master Plan for Tacoma. City Planning Commission.

WASHTENAW, MICH.—Washtenaw Plans Its Future. Washtenaw County Planning Commission. Charts. 6 pp.

WINNIPEG, CANADA—Zoning Greater Winnipeg. No. 6 of Master Plan Reports. Metropolitan Planning Committee, Winnipeg Town Planing Commission. Metropolitan Plan—Greater Winnipeg, 605 Time Bldg., Portage and Hargrave. Winnipeg, Manitoba, Canada. 1947. 56 pp.

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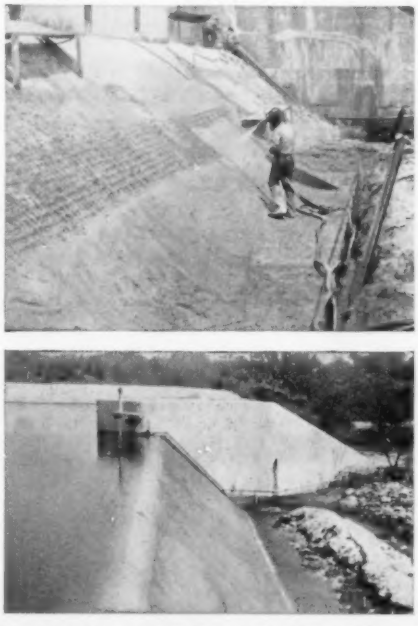
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.



DAM REBUILT WITH "GUNITE"

This is Lower Doughty Pond Dam belonging to the Atlantic City, New Jersey, Water Department, a poured concrete structure with fresh water upstream and tide water at the downstream toe. This structure became seriously disintegrated and eroded as shown in the upper photo, and was completely restored with "GUNITE" a minimum of six inches in thickness with double mesh reinforcement.

The lower view shows the finished job completed by us in 1941. Both the upstream and downstream faces were restored with "GUNITE," as well as the wing walls.

Before you repair, reinforce or rebuild any structure of stone, brick, concrete or metal, discover the possibilities of "Gunite." Write for full information today.

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GMC "450" Series

- "ARMY WORKHORSE" ENGINES of the same type, power rating and basic design as those installed in nearly 600,000 military trucks.
- EXTRA STRONG CHASSIS with frames of 10.1 section modulus, 5-speed transmissions, optional heavy duty rear axles, frame-mounted, angle-braced grilles.
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- ULTRA-MODERN GOOD LOOKS, advanced, streamlined style, yet with ruggedness in every feature of grille, fenders, hood and cab.

When it comes to medium duty trucks of heavy duty size and character, leading candidates on every count are conventional and cab-over-engine "450" GMCs.

These big, rugged trucks are built to handle gross vehicle weights up to 21,500 pounds . . . and gross combination weights as high as 37,000 pounds. They have extra strong frames . . . war-famed GMC "Army Workhorse" engines . . . outstanding postwar styling . . . cabs that are the last word in roominess, comfort, convenience and safety.

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Other Reports Received

BUFFALO, N. Y.—A Capital Expenditures Program for the City of Buffalo. Buffalo Municipal Research Bureau, Inc., 323 White Bldg., Buffalo, N. Y. May 1948, and August 1948. Mimeo. 10 pp. (May). 17 pp. (August).

CALIFORNIA—Organizational Charts. California State Government. Dept. of Finance, Administration Division, Sacramento, Calif. June 1948. Charts. Tables. 9 pp.

DAYTON, OHIO — Annual Report, Division of Health, 1947. Dayton Division of Health. Tables. Illus. 25 pp.

DUBUQUE, IOWA—Annual report, Water Department, April 1947-March 1948. Dubuque Water Dept. Charts. Tables. Illus. 64 pp.

GREAT BRITAIN—Local Government in Britain. British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. March 1948. Mimeo. 7 pp.

HONOLULU, HAWAII—Annual Report, Department of Public Works, 1947. Dept. of Public Works. Charts. Tables. Illus. 82 pp.

HORTON, KANS.—Annual Report, 1947. Tables. Illus. 15 pp.

ILLINOIS—Data on Public Water Supplies. State of Illinois, Dept. of Public Health. January 1948. Tables. Mimeo. 18 pp.

LAUREL, MISS.—Information and Economic Survey of Laurel, Miss. Laurel Chamber of Commerce, Industrial Department, Box 531. Laurel, Miss. 1948. Tables. Maps. Illus. Mimeo. 39 pp.

LEWISTON, MAINE—Annual Report, March 1948. Map. Tables. Illus. 58 pp.

LYNCHBURG, VA.—Annual Report, 1947. Tables. Illus. 59 pp.

MILWAUKEE, WIS.—Annual Report, 1947. William L. Slayton, Editor and Municipal Reference Librarian. Chart. Tables. Illus. 112 pp.

MINNESOTA—Proposed Soldiers' Bonus in Minnesota. Issued by The Minnesota Institute of Governmental Research, Inc., Saint Paul 1, Minn. July, 1948. Table. Maps. 15 pp.

MONTREAL, CANADA—Financial Statement and Assessments. The Montreal Metropolitan Commission, 10 Ouest, Rue St-Jacques, Montreal. 1947. Tables. 16 pp.

NEW JERSEY—Latest Financial Statistics of New Jersey Municipalities. New Jersey Taxpayers Assn., 414-17 Broad St., Bank Bldg., Trenton 8, N. J. August 1948. Tables. 40 pp. $1 (non-members).

NEW ROCHELLE, N. Y.—Annual Report, 1947. Prepared by Edward J. Glick, City Auditor. Charts, Tables. Illus. 138 pp.

NEW YORK—*Empirec*, First Issue, Sept., 1947, and Convention Issue, April 1948. Published by The New York State Public Recreation Society, Vivian O. Wills, Editor, Room 242, County Office Building, White Plains, N. Y. Mimeo. 10 pp. each.

ORLANDO, FLA.—Orlando Utilities Commission, Silver Anniversary Issue, 1947. Illus. 47 pp.

OXNARD, CALIF.—Our Town, Annual Report, 1947-1948. Illus. 16 pp.

PHILADELPHIA, PA.—Art Jury, Annual Report, 1947. Illus. 25 pp.

SAN FRANCISCO, CALIF.—Directory Federal and State Agencies San Francisco Bay Area. Bay Area Council, 315 Montgomery St., San Francisco, Calif. August 1948. 17 pp.

SAN FRANCISCO, CALIF.—Airports of the San Francisco Bay area. Reprinted from California Airports, 1947. Prepared by the California State Reconstruction and Reemployment Commission. California Aeronautics Commission, Sacramento, Calif., in Cooperation with the San Francisco Bay Area Council. Tables. Maps. 26 pp.

TAKOMA PARK, MD.—Improving The Government of Takoma Park. By Elwyn A. Mauck. Bureau of Public Administration, University of Maryland. College Park, Md. Chart. 45 pp.

TOPEKA, KANS.—Annual Report, 1947. Department of Finance and Revenue. Charts. Tables. 62 pp.

VIRGINIA—Annual Salaries of Municipal Officials in Virginia Cities. League of Virginia Municipalities, 902 Travelers Bldg., Richmond 19, Va. 1948. Mimeo. 3 pp. 50 cents.

UNITED STATES—The Relation of Opinion to Community Growth. By Richardson Wood. Reprinted from The Public Opinion Quarterly, Summer 1948 Issue. Pp. 182-191.

WASHINGTON—County Government in the State of Washington, Effect of Adoption of Proposed County Home Rule Constitutional Amendment. Bureau of Governmental Research and Services, University of Washington, Seattle, Wash. July 1948. Mimeo. 36 pp.

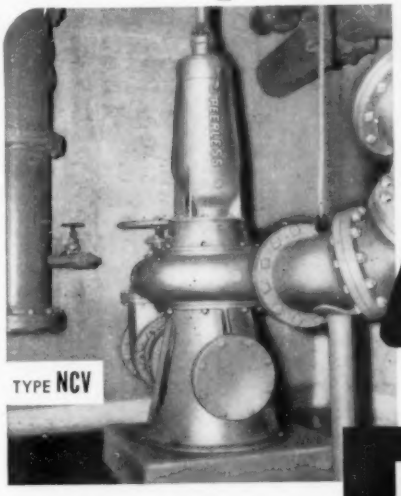
WASHINGTON — Washington Municipal Bulletin (3). Municipal Business and Occupational Taxes and/or License Fees on Public Utilities, Ordinances Licensing Punch Boards in Washington Cities, Ordinances Licensing Juke Boxes in Washington Cities. July 1948. Assn. of Washington Cities, Seattle. Mimeo. 5 pp. (Taxes, License Fees), 9 pp. (Punch Boards), 10 pp. (Juke Boxes).

WESTMOUNT, QUEBEC, CANADA—Annual Report, 1947. Charts. Tables. Illus. 60 pp.

WHITE PLAINS, N. Y.—A Record of Progress. The City of White Plains, N. Y. 1948. Charts. Illus. 16 pp.

WILLIAMSTOWN, MASS.—Annual Report, 1947. Tables. Charts. 131 pp.

The Pump with the Impeller that KEEPS SOLIDS MOVING



PEERLESS NON-CLOG SEWAGE PUMPS

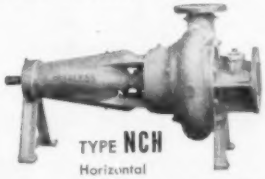
NO RINGS TO CLOG—
NO SEALS TO BIND

CAPACITIES: *100 to 7,000 gallons per minute*
DRIVES: *Electric and all types*
HORSEPOWER: *1 to 100 h.p.*
HEADS: *12 to 70 feet*

Horizontal & Vertical Types for Dry Basin Installation

NON-CLOG TWO PORT IMPELLER ▶

showing unique repelling vanes on outer shrouds.



Here is positive non-clog pumping *in action*, as well as name. All wearing rings, end plates, filler rings, etc., have been discarded in the Peerless design, in favor of an improved impeller with unique repelling vanes on both of its outer shrouds. These repelling vanes provide a pumping action similar to the working vanes between the shrouds, preventing accumulation of solids in the space between the impeller and casing side walls by agitating the solids into the center flow of the fluid stream. Specify Peerless Non-Clog Sewage Pumps for trouble-free service and economy in sewage treatment and relift stations. *Request Bulletin B-154.*

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Rye Improvements

(*Continued from Page 98*)

special referendum on the several bond issues required to finance the 17 specific projects in the program.

Attack on Parking

Uppermost in the minds of almost every civic and business group which met with the Commission was the need of providing off-street parking space in the central business district. Several groups suggested the acquisition and development of specific areas for parking.

The issue was met squarely. The parking phase of the program was offered to the public not as something of primary benefit to the merchant (who could move to better locations) but, in Mr. Clark's words, "as a matter of primary concern to the average residential taxpayer, who has to make up any loss in taxes from business property in his city."

As recommended, and approved by the taxpayers, Rye's off-street parking areas will handle about 500 cars at one time, estimated as adequate to serve Rye's own 11,000 population. Rye's business district serves little outside population. The parking areas will be located immediately to the rear of the shops, stores, and offices of the business district.

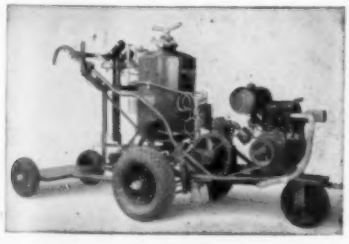
For two reasons the Commission and the civic groups decided all recommended parking areas should be acquired in the beginning even though only part of the areas would be developed immediately: (1) Total costs would be lower to the city since piecemeal acquisition would raise the value of parcels marked for later purchase; (2) property owners would know how to carry forward their own plans on the basis of where the new parking actually would be. The Rye program, furthermore, is designed to work no unnecessary hardship either on families now living in areas to be acquired.

An intensive study of municipal finances preceded recommendations on the size of the Rye public-improvements program. With an extremely low indebtedness because of postponement of public improvements during the past several years, Rye's borrowing capacity was $2,500,000. The City Planning Commission believed in having a $500,000 reserve borrowing capacity for emergencies and another $500,000 reserved for public projects not yet clearly enough defined for inclusion in the program. That set $1,500,000 as the desirable limit of the current program.

Cooperation—Not Pressure

Indispensable element in the success of the Rye plan was the complete cooperation of all officials and departments. Mayor Karl T. Frederick gave unstintingly of his time, as did William H. Selzer, City Clerk and Secretary of the Planning Commission, and Joseph A. Hannan, City Comptroller. A key figure in working out the program was Raymond W. Murphy, City Engineer and Commission member. Robert B. Hughes, City Council member of the Commission, played an important part, as did Jonathan Butler, Commission member, and E. J. Langeloh, Planning Technician.

No selling job in the usual sense of trying to "high-pressure" public interest and support was attempted to acquaint Rye with the program or to rally support. It was felt that the procedure of enlisting participation of civic groups would result in an interested public well informed on the program and the city's need for it. Word of mouth was the medium for the most part, with the press staunchly supporting both the down-to-earth procedure and the program itself. The printed report was on every taxpayer's table. There was a general feeling among the people that the public had received full information on the program. The work of the Commission and the civic groups spoke clearly for itself.



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Solves Zone-Marking Problem

Self-propelled and completely self-contained, designed to meet the needs of city and town street departments, airports and highways, for accurate high-speed striping.

Clean-cut, attractive lines are assured with K-C Air Curtains. Air actuated traction up to 5 mph with a trailer for the operator. Truck-mounted and other models are available for all requirements. Write for illustrated folder.

KELLY-CRESWELL CO., Xenia, Ohio

CUT COSTS... SPEED WORK
with this steel sheeting

ARMCO Steel Sheeting is ideal for trenches, cofferdams, bulkheads, bank protection, low retaining walls and other similar uses.

Light weight and a small displacement area make ARMCO Steel Sheeting a fast-driving, cost-cutting tool on either temporary or permanent construction. You'll like the way it saves you time and money.

Both interlocking and flange type ARMCO Sheeting can generally be driven to full penetration before excavation. The corrugated metal design assures ample strength without excess bulk. It means easier handling, faster driving and lower costs.

Another big advantage is that on temporary jobs ARMCO Sheeting can be readily pulled and used over and over again. A convenient slot near the top of the section makes pulling easy.

There is no problem in hauling or storing ARMCO Steel Sheeting. Sections nest together and save space. Interlocking type sheeting is available in gages 12 to 7; flange type in gages 12 to 3. Standard lengths are from 6 to 20 feet or more in multiples of 2 feet. Write for prices and complete information. Armco Drainage & Metal Products, Inc., 1285 Curtis St., Middletown, O.

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IN · SINK · ERATOR · · · FOOD WASTE DISPOSER
. . . with Reversing Action

Daddy of 'em all!

In the early days of its development the IN-SINK-ERATOR was commonly referred to as the "Electric Pig". It was acclaimed all over the country that this method of food waste disposal was the greatest new sanitary development since the advent of the inside toilet, because IN-SINK-ERATOR gave them the first practical design in garbage eliminators.

For over ten years preceding marketing of the IN-SINK-ERATOR in 1938, constant study and research, resulting in the development of IN-SINK-ERATOR's outstanding features have proved without question that the IN-SINK-ERATOR method of food waste disposal was not only practical, but was an asset to the present private or public sewerage system.

Following are the developments introduced by IN-SINK-ERATOR:

REVERSING ACTION . . . The IN-SINK-ERATOR is equipped with a heavy duty reversing switch so arranged that it alternates the direction of rotation of the rotor shredder at each "on" position of the switch. This automatic reversing, two-directional action of the rotor shredder, operates with equal efficiency in either direction of rotation, doubles the life of the shredding elements, adds a self-sharpening feature, and assures long, trouble-free operation.

COMPACT, INTEGRAL DESIGN . . . The IN-SINK-ERATOR was the first food waste disposer designed with the cutting elements assembled directly to the motor shaft, providing a compact, close-coupled unit. This is only one of the features originated by IN-SINK-ERATOR to assure a compact, efficient and attractive food waste disposer already proved by over ten years of satisfactory service in the field.

SELF-SERVICING FEATURES . . . The safety feed spout, motor overload protector, emergency wrench and reversing action are only a few of the many features incorporated into the IN-SINK-ERATOR for the convenience and safety of the operator as well as the unit, and also for simplicity of operation and a minimum need for outside service. These features provide years of satisfactory, trouble-free operation of the IN-SINK-ERATOR.

CONTINUOUS FEEDING . . . Food waste can be continuously fed through the drain opening while the IN-SINK-ERATOR is in operation. This continuous feeding feature gives IN-SINK-ERATOR unlimited capacity for domestic use. A few minutes each day is all that is required to dispose of the food waste of large or small families.

FITS ANY KITCHEN SINK WITH STANDARD 3½" TO 4" DRAIN OPENING

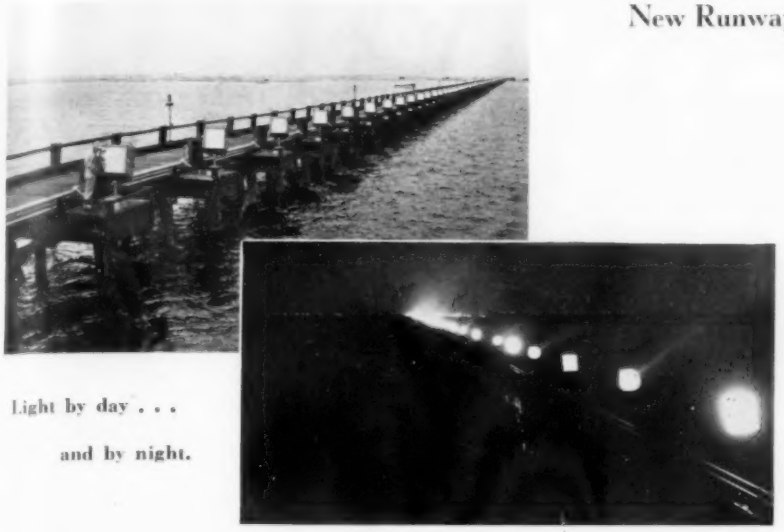
IN · SINK · ERATOR MFG. CO.

RACINE • WISCONSIN

Specializing Exclusively in the Manufacture of Food Waste Disposers Since 1938

News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings



Light by day . . .

and by night.

New Runway Light from Westinghouse

Designed to exceed every requirement of CAA Specification L-819 and Army Air Force Specification No. 32957, a new high-intensity runway light announced by Westinghouse makes available a rugged unit for new installations or for replacement for existing lower-intensity runway lights.

The two main beams are formed by duplicate double-lens assemblies from a single lamp. Color is provided by the inner lens so that there are no hot colored lenses exposed to rain or snow. Controlled, uniform fill-in light across the runway and on the side away from the runway is provided from the same lamp by prismatic panels on the sides of the unit. Further information concerning this unit for airports may be secured from the Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

Harry H. Barber Dies

Harry H. Barber, Chairman of the Board of the Barber-Greene Co., Aurora, Ill., died recently. He had been in failing health for several years.

Harry H. Barber

One of the pioneer designers of modern construction equipment, Mr. Barber had retired in 1945 as president of the company he had formed in 1916 in partnership with Wm. B. Greene. D. G. McIlwraith joined the company a few months later. In 1917, the company was incorporated under its original name—Barber-Greene Co.

Mr. Barber was instrumental to a major degree in the development of Barber-Greene's first machine, a portable belt conveyor which was finished in 1916. This machine was followed by the self-feeding bucket loader which became a semi-crawler machine in 1919 and a full-crawler mounted unit a year later. It was in that same year that the first experiment on the vertical-boom ditcher was begun, and 1920 was also the year that gave birth to the first snow-loading machine ever built. Three years later, the portable flight conveyer came into being. Mr. Barber's developments, the ones mentioned and those that came during the 1930's and 1940's, were all new conceptions rather than improvements on older machines of the same type.

Neptune Acquires Control Of Rensselaer Valve

The Neptune Meter Co., 50 West 50th St., New York 20, N. Y., has acquired the controlling stock interest in the Rensselaer Valve Co., Troy, N. Y., one of the oldest manufacturers of waterworks valves and hydrants.

John H. Ballantine, D. E. Broggi, J. R. Van Gorder, and A. A. Hanson, who are directors of Neptune, have been elected to the Rensselaer Board; E. A. Rutledge will continue as a director and as vice-president and general manager. Sales will continue to be handled through the same outlets as they have in the past.

De Laval Appoints Greenland District Manager

The De Laval Steam Turbine Co., Trenton 2, N. J., has appointed J. A. Greenland as district manager of the De Laval Seattle office. Mr. Greenland joined De Laval in 1938.

Pettibone Mulliken Purchases Universal Engineering

The Pettibone Mulliken Corp., Chicago, Ill., has purchased the assets and business of the Universal Engineering Corp. of Cedar Rapids, Iowa, one of the largest and oldest manufacturers in the line of crushing machinery and allied equipment.

Todd Fogging Machine Blitzes Mosquitoes at Idlewild

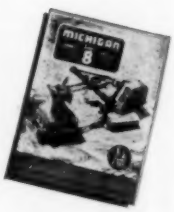
A fogging machine produced by the Todd Shipyards Corp., 81-16 45th Ave., Elmhurst, Queens, N. Y., shoots a jet of DDT-laden fog over the main runway at Idlewild, New York International Airport, to eliminate the mosquitoes that come in from near-by swamps at the International Air Exposition.

4 BRAND NEW MICHIGAN TRUCK SHOVEL-CRANES...

SERIES 8

½ YARD
8 TON

Here's a range of four completely new half-yard MICHIGANS designed to meet *your* particular job requirements. Your choice of *single-engine* power or *twin-engine* power, *two-wheel drive* or *four-wheel drive*. Remote control, which permits fast, easy maneuvering on the job, is available as optional equipment on the twin-engine models.



Get all the facts! Write for your copy of Bulletin 101.

MICHIGAN

MICHIGAN POWER SHOVEL CO.
373 SECOND STREET, BENTON HARBOR, MICHIGAN, U. S. A.

Rector Promoted By A. C. & B.

The American Coach & Body Co., 9503 Woodland Ave., Cleveland 4, Ohio, has appointed Robt. R. Rector as district representative for the Southern Division of the company. In his new assignment, Mr. Rector will cover the states of Alabama, Florida, Tennessee, Georgia, Mississippi and Louisiana, working out of the Atlanta area.

Robert R. Rector

A graduate of Ohio State University and a veteran of this war, Mr. Rector has spent two years on various jobs in the company's plant, and was in the production-control department for a year.

Vest-Pocket Ditcher Cuts Narrow Ditch

One of the smallest excavating machines ever built, the 401 ditcher, made by Gar Wood Industries, Inc., Findlay Div., Findlay, Ohio, digs a ditch as narrow as 6 inches. Digging buckets for 8-inch widths are available. The unit digs to a 4-foot depth.

Weighing only 6,580 pounds and powered by a 47-hp industrial-gasoline engine, the ditcher is 13 feet 9 inches long and 4 feet 4 inches wide. The result is a machine that can squeeze through areaways or be maneuvered on walks or lawns without causing damage.

The new Buckeye 401 Pony Ditcher.

The digging speeds of the ditcher range from 2.2 to 14.7 feet per minute, with digging buckets traveling at speeds between 245 and 538 feet per minute. The excavator boom is all-welded steel-box type and is raised and lowered by means of a self-locking worm hoist powered directly from the engine transmission. Spoil is discharged to both sides of the ditch, and the crawlers, which are driven from forward by a heavy truck-type differential, are non-clogging with cast alloy-steel treads. The left side of the crawler is adjustable vertically so that the machine can maintain an even keel and dig a vertical ditch when operating along a slope or with one crawler on a curb.

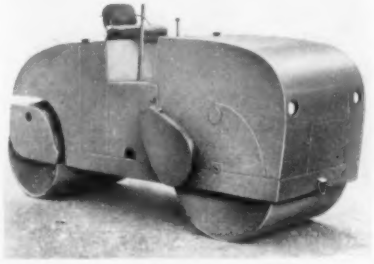
The ditcher has been found particularly useful in digging ditches for small gas mains and service pipe from a main extension to individual buildings, and for water-service pipe and sewage lines.

Three Sealcoat Tandem Rollers Varying From 3 to 10 Tons

The Shaw Sales & Service Co., 5100 Anaheim-Telegraph Rd., Los Angeles, Calif., is now in production on three new sizes of Sealcoat tandem rollers: a 3- to 5-ton variable weight, a 5- to 8-ton, and a 7- to 10-ton.

The rollers have been designed so that they can work to within 2 inches of buildings and fences. They have single-lever hydraulic steering, are equipped with electric starters, Alemite pressure lubrication, Timken bearings on all rotating shafts, and a foot-operated parking and service brake.

The smallest of the rollers is powered by a 25-hp industrial engine and it has two forward and two reverse speeds. The steering and compaction rollers are each 38 inches wide. Traveling from 1.55 mph to 4 mph, the roller has a 12-foot turning radius, handling easily in corners and in confined spaces.



The 3- to 5-ton Sealcoat tandem roller.

The two larger rollers are powered with 6-cylinder Chrysler industrial engines with fluid coupling. The three-speed Brown-Lipp transmission allows a forward and backward speed range from .93 mph in first gear up to 4.15 mph in third. The steering and compaction rollers on both are each 50 inches in width.

Hydraulic Backfill Blade Added to Schramm Model #60

A recent addition to the Schramm Model #60 crawler-type compressor is a backfill blade operated by hydraulic pressure supplied by a hydraulic pump. The unit is self-contained with the pressure-relief valve, hydraulic reservoir, and pump in one housing.

Two hydraulically operated cylinders mounted on track guards move the blade up and down, traveling 14 inches above ground level and 11 inches below ground level. The blade is particularly useful for backfilling ditches when used in conjunction with a pneumatic back-fill tamper; it may also be used for light grading around new developments.

The Schramm #60 crawler-type compressor with hydraulic back-fill blade attached.

The machine is manufactured by Schramm, Inc., West Chester, Pa.

Mercury-Vapor In Medford, Oregon

A new mercury vapor lighting system, the first of its kind in southern Oregon, has been installed in the main business district of Medford, Ore. The luminaires are attached to 6-foot brackets on Union Metal tapered steel poles, which are staggered three to a city block. The 16,000-lumen lamps are mounted 30 feet above the pavement.

The system is manufactured by the General Electric Co., Schenectady 5, N. Y.

Odor Neutralizer

For use in municipal buildings, rest rooms, and recreational areas, Nuo evaporates a group of scientifically blended volatile substances which combine to counteract objectionable odors. Nuo operates by evaporation through the interior wicks of pint-size jars, by spraying, or in a pail of mop water.

The wick floats on top of the liquid. It does not have to be raised and it does not become discolored. The same container and wick can be used repeatedly by refilling from bulk containers.

Nuo is manufactured by Maintenance Service, Inc., 14 Riverside Ave., Westport, Conn.

REMINDER

(Courtesy Mother Nature)

THE TURN of summer into fall is Nature's most poignant reminder of another year gone by.

It's a reminder that should make you think, seriously, that you yourself are a year closer to the autumn of your own particular life.

What steps have you taken . . . what plan do you have . . . for comfort and security in those later years?

You *can* have a very definite plan—one that's automatic and *sure*.

If you're on a payroll, sign up to buy U. S. Savings Bonds on the Payroll Plan, through regular deductions from your wages or salary.

If you're not on a payroll but have a bank account, get in on the Bond-A-Month Plan for buying Bonds through regular charges to your checking account.

Do this . . . stick to it . . . and every fall will find you richer by even more than you've set aside. For your safe, sure investment in U. S. Savings will pay you back—in ten years—$100 for every $75 you've put in.

AUTOMATIC SAVING IS SURE SAVING—

U.S. SAVINGS BONDS

Contributed by this magazine in co-operation with the Magazine Publishers of America as a public service.

Electric Garbage Pulverator Displayed at Exposition

Mayor Fletcher Bowron of Los Angeles, left, inspects the electric garbage pulverator manufactured by the Given Mfg. Co., 3855 Santa Fe Ave., Los Angeles 11, Calif. The Pulverator, enclosed in a demonstration mechanism, is being described at the Los Angeles All-Electrical Exposition by Peter Kassler, Given's vice-president.

Conway Succeeds Robbins at Koehring

John S. Conway, who previously held the position of export sales manager for the Koehring Co., Milwaukee, Wis., has been appointed general sales manager; John E. Chadwick has been appointed assistant sales manager, and R. E. Stewart, export - sales manager.

John S. Conway

In his new post, Conway succeeds J. F. Robbins, who will become president and general manager of the Capitol Equipment Co., a Koehring distributor in Harrisburg, Pa.

Mr. Conway joined Koehring in 1941 after doing engineering and sales work for the French Battery Co. and the Chevrolet Motor Co.

Engineers, Contractors Study Mutual Problems

Engineers and contractors will get together in the future to iron out problems common to both. R. E. Dougherty, New York City, president of the American Society of Civil Engineers, and Dwight W. Winkelman, Syracuse, N. Y., president of the Associated General Contractors of America, have approved the establishment of a National Joint Cooperative Committee.

The purpose of this committee is to study matters of mutual concern to civil engineers, general contractors, and the public with a particular view to recommending procedures for carrying out construction more economically. At present, members of the committee have not yet been appointed. Suggested discussion topics are:

Improved construction courses in engineering colleges.

Making work in the design and construction of public works attractive to young engineers.

Preparing clearer standard contract clauses for engineering construction.

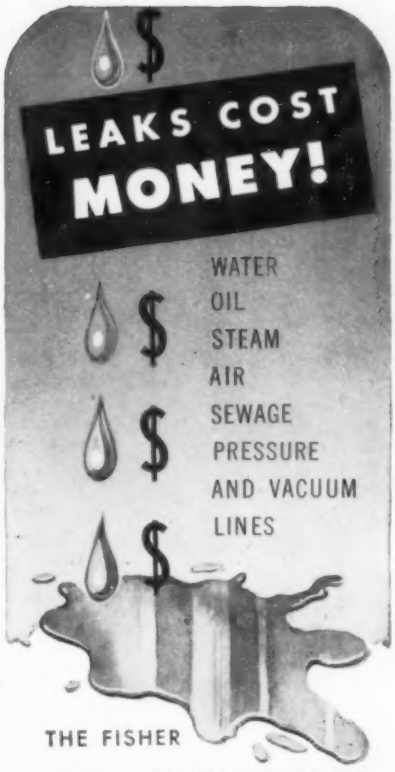
Preparing clearer and more definite specifications.

Utilizing design which can obtain maximum benefits from mechanized construction.

Insuring equitable and clearly understood bidding and awarding procedures.

The Lighthouse of the Highway
EMBURY
Traffic Gard
The Warning Lantern with the SAFETY BEAM

Order through Your Jobber
EMBURY MFG. CO., WARSAW, N. Y.



THE FISHER
M-SCOPE
leak detector

positively locates with pin-point accuracy leaks in water, oil, and other fluid lines. Anyone can operate the Fisher Leak Detector . . . can cut down your "shrinkage" through costly leaks.

FISHER M-SCOPE EQUIPMENT

$67.50 AND UP

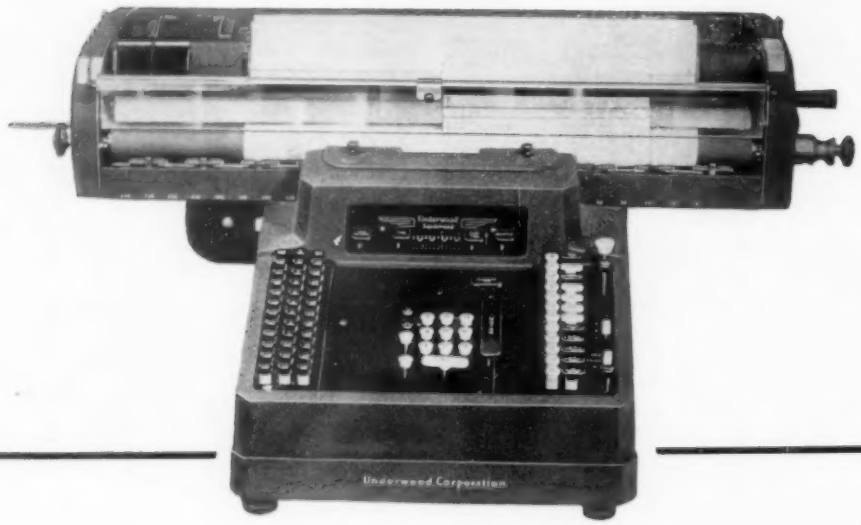
Send for FREE booklet

Complete specifications and operating instructions available upon request. Write Dept. 3

Fisher Research Laboratory, Inc.
PALO ALTO
CALIFORNIA

UNDERWOOD SUNDSTRANDS

Bill Bayonne's Water



One was installed in 1942 and another in 1945 to bill 11,000 water accounts for the City of Bayonne, New Jersey. In addition to over 10,000 domestic customers there are 150 apartment houses and 250 factories. Domestic bills are rendered quarterly, apartments and factories are billed monthly. Billing goes forward daily. Says Mr. Joseph R. Gotti, Chief Clerk and Acting Water Superintendent:—

"The reason I like the Underwood Sundstrand Accounting Machine over other methods is that it provides an original bill and an original unit ledger card. The same applies when posting cash to the ledger card —no messy carbon copy—but the original."

Let us send you the particulars about Underwood Sundstrands for water, electric and sewer-rental billing, also tax billing, budgetary accounting and other phases of municipal accounting procedures. . . . no obligation.

UNDERWOOD CORPORATION

Accounting Machines . . . Typewriters . . . Adding Machines . . . Ribbons, Carbon Papers and Other Supplies

One Park Avenue **New York 16, N. Y.**

Sales and Service Everywhere

Peerless' New Indianapolis Plant

The new Indianapolis, Ind., plant, into which personnel and equipment are being transferred by the Peerless Pump Division of the Food Machinery & Chemical Corp. Works manager of the Indianapolis plant is H. J. McKenzie.

Maurice J. Swan Retires

Maurice J. Swan, well-known figure on the media-purchase side of advertising, has retired after 47 years with the International Harvester Co., 180 N. Michigan Ave., Chicago, Ill.

Mr. Swan's career began with McCormick Harvesting Machine Company a year before this company and others in the farm equipment manufacturing field were consolidated under the International Harvester name in 1902. By 1917 he had become the primary point of contact between the company and the publications carrying Harvester's advertising.

Motorcycle School

The Harley-Davidson Motor Co., Milwaukee 1, Wis, will resume its school for dealers and mechanics on motorcycle theory and practice in the Fall.

Numbering alumni of over 3,500, the school began in 1917 as a training station for soldiers; two years later it became the training headquarters for Harley-Davidson dealers and their mechanics.

FWD Reorganizes Sales Division

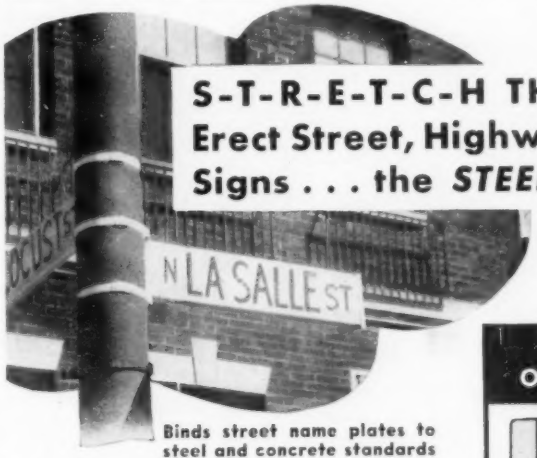
A series of major changes in the reorganization of the sales division of the Four Wheel Drive Auto Co., Clintonville, Wis., is under way in a move by the company toward a development of specialized supervisors and salesmen, according to an announcement by R. L. Koehler, director of sales.

R. L. Koehler

A. E. Johnson, formerly assistant field sales manager, has been named supervisor of government sales. C. A. Rogers, who has specialized in fire-truck sales for FWD, has been appointed supervisor in this market. Lloyd Scheider, formerly assistant to General Manager Robert A Olen, has been appointed supervisor of defense sales. Roy Peterson, whose work has dealt particularly with the oil-field market, will now supervise this market. C. C. Cooke, previously administrative assistant to the director of sales, will hold the position of supervisor of the order department.

For the development of new markets, particularly the contract market and over-the-road haulers, Leo Polzin, who had been field sales manager, has been appointed manager of national accounts.

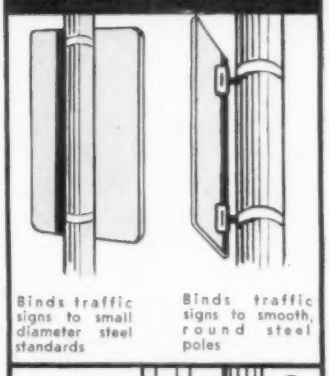
Stanley Wick, who previously held the position of manager of the order department, has been appointed assistant director of sales in charge of all office domestic sales activity, and Jack Kelly, formerly assistant field sales director, has been appointed assistant director of sales in charge of administration of FWD's field organization.



Binds street name plates to steel and concrete standards

S-T-R-E-T-C-H THAT BUDGET! Erect Street, Highway and Traffic Signs . . . the *STEELBINDER* Way

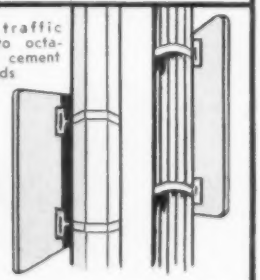
HOLDS FAST ON ANY SURFACE



Binds traffic signs to small diameter steel standards

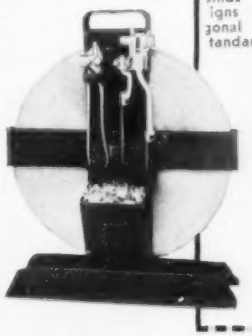
Binds traffic signs to smooth, round steel poles

Binds traffic signs to octagonal cement standards



Binds traffic signs to fluted cement standards

COST drops, signs look trim and stay put when erected with a Steelbinder Tool and stout, corrosion resistant strap. Maintenance men like the easy way Steelbinders strap on the sign, even in cold weather, and the work saved when the sign is removed. Cement or steel standard, round, square, or irregular shape, plain or fluted surface, the Steelbinder method provides a permanent, trim looking sign mounting, saves work and material, and eases the strain on your budget dollar.



COMPLETE PORTABLE STRAPPING OUTFIT

Light enough to carry. Includes Steelbinder Strapping Tool, Strapping, Hammer Cutter, and supply of seals.

Write Today for Booklet No. SSM-3, "Street, Highway and Traffic Signs."

STEEL STRAPPING

A. J. Gerrard & Co.

221-Y N. LaSalle St., Chicago 1, Ill.

taking the waste out of waste disposal!

There's no wasted time, money, or land with the modern method of sanitary fill waste disposal . . . an Oliver "Cletrac" tractor and a Drott Bull Clam Shovel.

This handy "one-man crew" digs trenches, packs down refuse in the trenches, covers it over with clean dirt, and levels off the area. Garbage dumped is covered the same day . . . eliminating fire hazard, objectionable odors, breeding grounds for flies, rats, etc., and preventing loose waste and dust from blowing over the adjacent neighborhood. All this is accomplished at a remarkably low cost and with far less manpower.

In addition to the many economical advantages of this modern method of waste disposal, no land is wasted. The area is left in a perfectly landscaped condition suitable for park, playground or building purposes.

Oliver "Cletrac" tractors' exclusive steering principle gives them the greater maneuverability required for the restricted operating conditions of many municipal jobs. They are ruggedly built for long, economical service and are unusually accessible for easy maintenance.

For all the facts, and for complete details on modern sanitary fill methods, write The OLIVER Corporation, Industrial Division, 19300 Euclid Avenue, Cleveland 17, Ohio.

Cletrac
a product of
The OLIVER Corporation

Spreading and compacting the rubbish

OLIVER
Cletrac
SALES
SERVICE

"THE SIGN OF EXTRA SERVICE"

Covering trench with layer of clean dirt

New Catch-Basin Cleaner and Service Truck

Two new tools for this public-works official will be unveiled at the annual Congress of the American Public Works Assn. in Boston, Oct. 17-20. One will be a special-service truck, displayed for the first time. The second will be the Krane Kar mobile swing-boom crane equipped with an orange-peel bucket for catch-basin cleaning.

The Krane Kar catch-basin cleaner has many features that make it especially useful. Its narrow width insures that it will not unnecessarily block traffic. The location of the operator allows him full view of all the work. The operator performs all work, whether using the crane and boom or driving the Kar to a new location from the same operating point. The Kar is front-wheel-powered, and is guided by a caster wheel in the rear. This makes it exceptionally maneuverable. The Kar uses a telescopic boom that is raised or lowered by power and also uses a Hayward Orange Peel bucket for the actual lifting of muck from the sewers. A cab can be supplied that will allow work in inclement weather.

The Milford Special Service Truck, Model QY, is especially designed for public utilities and municipalities. It has a normal rating of 15 tons, and a travel speed of 55 miles per hour. Mounted on the truck is a Silent Hoist power swing-boom crane of 5-ton capacity.

Inquiries or requests for literature on the Milford special-service truck should be addressed to Milford Crane & Machine Co., Milford, Conn. Inquiries on the Krane Kar should be addressed to the Silent Hoist & Crane Co., Brooklyn 20, N. Y.

New Film On Adams Motor Graders

A new 16-mm full-color sound moving picture, "Adams All-Purpose Motor Graders," has recently been completed by the J. D. Adams Mfg. Co., Indianapolis 6, Ind.

The machines are shown at work on a wide variety of street construction and maintenance jobs and on snow-removal work.

CAST IRON PIPE FOR SALE

Bell and Spigot
Class 150
19,000 ft.—6 in.
2,500 ft.—8 in.
22,500 ft.—10 in.
12′ lengths

Immediate Delivery, Any Quantity

▪

Write, Wire, Phone

▪

Sonken-Galamba Corp.
2nd and Riverview, X-335; Kansas City 18, Kansas
Phone: THatcher 9243

Save Money and Make a Better Patch

Your First Drum of NOSTRIP is our Best Salesman

Now that the Fall and Winter patching season is here—try Nostrip this year! Experience will prove that Nostrip makes bituminous patches hold and last, even under the most adverse weather conditions.

Patch work may even be carried on during the rain, and it is not necessary to dry out chuckholes or to use dry aggregates for stock-pile or patching mix. . . Your first drum of Nostrip is our best salesman. Take advantage of this special offer. Try Nostrip on your next patching job.

The first drum only, to an entirely new customer, will be priced specially to you—$60.00 delivered anywhere in the United States—400 pounds net weight of Nostrip.

Order on your own letterhead or write us.

NOSTRIP DIVISION OF MAGUIRE INDUSTRIES, INC.
122 East 42nd St. **New York 17, N. Y.**

CONCRETE PAVEMENT
means lower street lighting costs

IN a study of street lighting costs based on an actual municipal rate, it was found that it would cost $483 per year to provide adequate lighting* for 1,000 feet of a dark-surface street 40 feet wide. For light-colored concrete, which has the highest light reflectance of any pavement, the cost would be only $283.80, a saving of $199.20, or more than 40 per cent.

Over a 25-year period this saving in street lighting costs would amount to about $5,000 for every 1,000 feet, or more than $26,000 for every mile of 40-foot pavement.

Reduced lighting costs are only one of the many economies of concrete pavement for streets and airports. Concrete's first cost is usually less than any other pavement of equal load-carrying capacity. It costs far less to maintain. It renders long years of uninterrupted service. It saves on gas, tires and car repairs. It is truly the ***low-annual-cost*** pavement.

*Lighting recommendations are based on light reflectance as determined by the Committee on Street and Highway Lighting of the Illuminating Engineering Society. The Committee made a study of the subject in an effort to reduce traffic fatalities, which are three times greater at night than during the day. Using concrete's light reflectance of 20 per cent as a base, the Committee recommends proportionate increases in illumination for other pavements—up to 100 per cent more for dark-colored pavements with a light reflectance of only 5 per cent.

PORTLAND CEMENT ASSOCIATION

DEPT. 10-4, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Electric Grass Trimmer Eliminates Hand Work

The Grasshear is an electric device, consisting of a head and a long handle, which permits rapid close trimming of

The Grasshear in action.

lawns. Of use for trimming close to rocks, fences, buildings, and along paths, the Grasshear eliminates costly hand trimming. The unit is particularly useful for sharp inclines where it is difficult to use a hand or power mower.

The head of the mechanism consists of a combination cutter and fan (suction pulls the grass into the blade), and a plastic guard ring. The motor is in a sealed housing, and there is a rear-guard protector.

Weight has been reduced to a minimum and the mechanism is so constructed that when the handle is adjusted according to the height of the operator, the Grasshear remains in perfect balance to reduce operator fatigue.

The motor is a Universal—air-cooled, dust-proof, and sealed in an alloy housing—and it can be operated from an electric outlet or portable generator. All wiring is concealed and protected. Controls are on the handle.

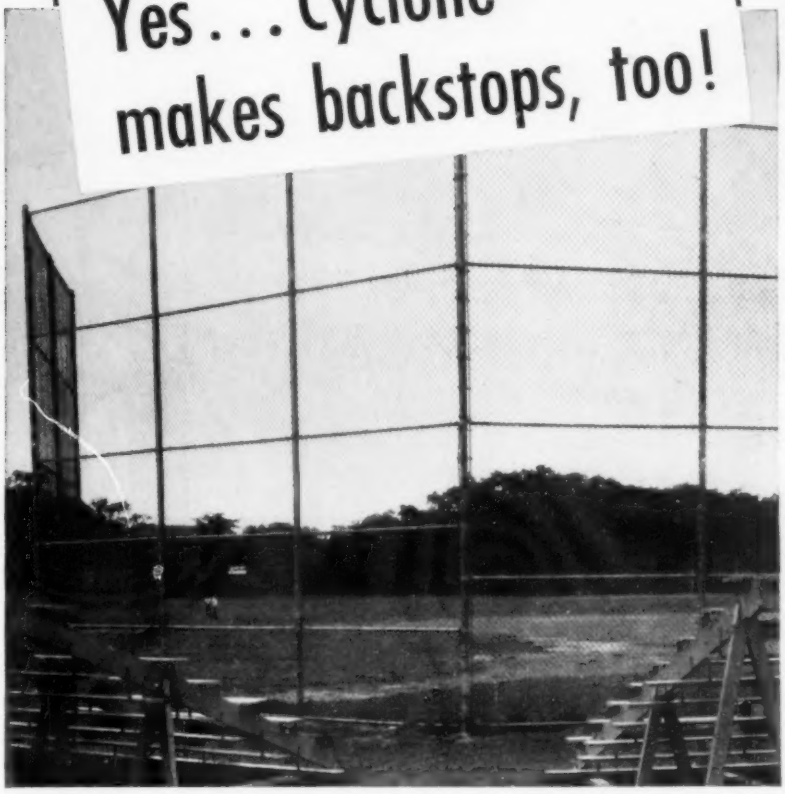
Stanley Electric Works, New Britain, Conn., is the manufacturer.

New Firm Organized Specializing in Incineration

Nash, Cadmus & Voelker, Inc., 45 West 45th St., New York 19, N. Y., a recently organized firm, specializes in all phases of waste disposal by incineration.

The members of the firm are George A. Nash, former manager of general sales for the Morse Boulger Destructor Co.; Thomas W. Cadmus, former general manager for Kerner Incinerator and general construction manager and assistant vice-president for Morse Boulger, and Edward M. Voelker, former chief engineer for Morse Boulger.

Yes . . . Cyclone makes backstops, too!



WHEN you're planning public projects such as playgrounds, parks, pools, power plants, schools and stadiums — it's only natural to think of Cyclone in terms of fence. After all, Cyclone *is* the world's most widely-used property protection fence.

But Cyclone also makes Backstops which maintain their alignment for many years without upkeep expense . . . Window Guards which give the utmost in protection . . . Gates of many types . . . Tennis Court Enclosures which have long been "standard equipment" for many of the finest tennis clubs. And all of these Cyclone products are ruggedly constructed of sturdy steel. The fabric is galvanized *after* weaving for complete weather resistance. All of the products meet the same high standards which have made Cyclone Fence so famous.

Send for our free illustrated book. It gives complete information on different types of fence, gates, athletic field equipment, etc. Then, if you want help in drawing up your plans—in making cost estimates—ask for assistance from our sales engineers. There's no obligation incurred. And no matter what project you may have in mind, remember: *No job is too large—no job is too small for Cyclone.*

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
WAUKEGAN, ILLINOIS · BRANCHES IN PRINCIPAL CITIES
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S CYCLONE FENCE

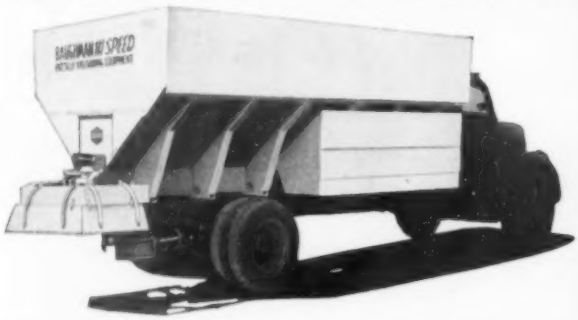
CLIP THIS COUPON SEND IT TO—

Cyclone Fence, Waukegan, Ill., DEPT. B-108
We'll send you our free, 32-page book on fence. It's full of facts, specifications, illustrations. Shows 14 types of fence. Before you choose any fence for your property, get the facts about Cyclone.

Name.....
Address.....
City..... State.....
Interested in fencing: ☐ Industrial; ☐ School; ☐ Playground; .. Residence. Approximately ..... feet.

USS
UNITED STATES STEEL

The BAUGHMAN Spreader Does the Job Faster...with Less Manpower



FAST ACTION SAVES LIVES when streets and highways are covered with ice. The BAUGHMAN spreads skid-proofing material up to 25 mph . . . from 8 to 30 ft. widths.
CUTS COSTS—one-man operation. Operates efficiently in the coldest weather—built-in exhaust heater keeps material ice-free and in working condition . . . prevents freezing of conveyor chain.

CAB CONTROL!

Vacuum clutch control in cab starts and stops drag chain and spinner. Prevents waste . . . skidproofs hills and curves to desired lengths . . . spot-spreads at junctions — ALL ONE-MAN CONTROL!

CONCENTRATED SPREAD

Baffle plates limit width of spread . . . stop waste . . . prevent damage to passing cars and injury to pedestrians. Completely regulated volume . . . uniform spreads.

BAUGHMAN Model C Spreader Attachment For Dump Bodies

Requires no hopper . . . spreads up to 25 ft. Positive roller chain drive and auger-type feed. Rugged compact construction. Heavy hardened cut-steel gears, completely sealed against dust. Fits bodies 5½ to 6½ ft. wide. Other widths on special order.

Also Available With Hydraulic Motor Drive.

Write for Full Information

BAUGHMAN

BAUGHMAN MANUFACTURING CO., Inc.
2101 Shipman Rd. Jerseyville, Ill.
"There is a Baughman Distributor Near You"

Goldak Invites Comparison

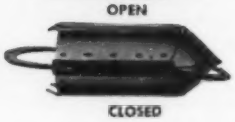
- Shows - not approximate but *EXACT* location of buried pipes, mains, services, gates, tees, ells, stubs, etc.
- Completely new electronic circuit provides an incomparably strong positive location signal.
- No trick tubes or other hard-to-get parts. Uses readily available standard miniature radio tubes and flashlight batteries.
- Compact in design, ruggedly built for lifetime use.
- Operating simplicity. A one-man instrument.
- Featherweight - only 11 lbs. complete.
- Guaranteed superior performance - resulting from 15 years of electronic research and construction of locating instruments.

GOLDAK *OUTSELLS* - BECAUSE IT *EXCELS*

WRITE FOR DETAILS
THE GOLDAK COMPANY
1544 West Glenoaks Blvd., Glendale 1 California

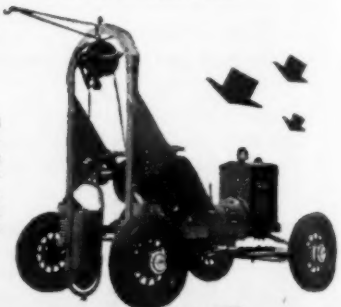
KEEP SEWERS OPEN with OK CHAMPION POWER SEWER CLEANER

OPEN



CLOSED

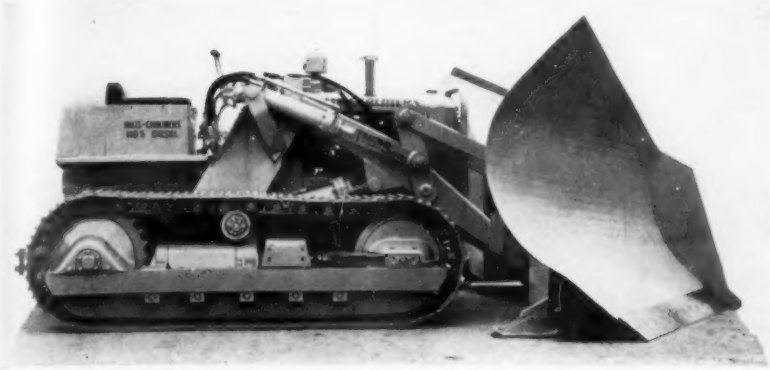
Town and City officials throughout America are adopting OK CHAMPION Power Sewer Cleaner to keep sewers clean and efficient. Takes roots, dirt, sand, and other debris up from main in one continuous operation. All men work above street level.



Pulling forward opens the jaws that bite into obstructions. Reversing the pull on the bucket automatically closes jaws which hold load pulled back to street level. Write for complete details.

CHAMPION CORPORATION 4716 SHEFFIELD HAMMOND, IND.

Snow-Removal Problems?



A new V-type hydraulically operated snowplow and a 2-cubic-yard snow bucket have just been added to the list of allied pieces available to the Allis-Chalmers HD-5 crawler. The new units complete the year-round, all-purpose capacity of the HD-5.

Manufactured by the Allis-Chalmers Co., Milwaukee, Wis., both the V-type plow and the 96-inch-wide snow bucket manufactured by the Tractomotive Corporation of Deerfield, Ill., are interchangeable on the Tracto-Shovel assembly and require no extra equipment to effect efficient mounting, which is accomplished by removing four pins from any one of the four Tracto-Shovel buckets which happens to be on the tractor, and then driving the HD-5 up to the unit to be mounted. No hoists or derricks are needed because the hydraulic arms of the Tracto-Shovel are automatically lifted in place. The entire operation requires only a few minutes.

Dimensions of the plow are: width on the ground, 116 inches; width at the top, 128 inches; height of the V in front, 44 inches; and height of the V in the rear, 66 inches. The snow bucket is 96 inches wide and has a 2-yard capacity.

Haas With Tarshis

Charles J. G. Haas is now associated with the Tarshis Interstate Corp., 24-08 40th Ave., Long Island City, N. Y., exclusive representatives for the Badger Meter Mfg. Co.

The sale of Badger's products to the water works plants in New Jersey and portions of New York and Connecticut will be under the supervision of Mr. Haas.

Levison Elected Director of Construction Industries Assn.

Arthur A. Levison, vice-president in charge of the construction equipment department, Blaw-Knox Division of the Blaw-Knox Co., Pittsburgh 30, Pa., was elected a director of the Construction Industries Association for a three-year term.

Arthur A. Levison

The Construction Industries Association is affiliated with the American Road Builders' Association and constitutes the Manufacturers' Division of the ARBA.

Mr. Levison was also recently elected to membership of the executive board of the Committee on Concrete and Concrete Aggregates of the American Society of Testing Materials.

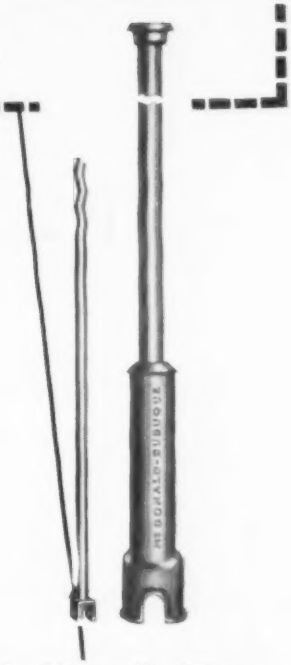
FOR CLEAN, SAFE
SHOWER ROOMS AND SWIMMING POOLS

"Bull Frog"
SAF-T-KLENZ

Removes rust stains, lime deposits, soap oil, body grease, algae formation leaving floors and decks practically slip-proof.
Minimizes conditions that breed and spread infectious germs.
Simply sprinkle Saf-T-Klenz on damp surface, scrub or mop lightly, and flush with water.

WRITE TODAY FOR LIBERAL FREE SAMPLE!
BERMAN CHEMICAL CO., 715 SUPERIOR ST., TOLEDO 4, OHIO

THAT *Extra* TOUCH



This McDonald "Barry Pattern" Extension Service Box, E5601, is another example of the extra quality you get in all McDonald waterworks items. Made in two telescopic sections . . . upper section is 1 inch black pipe with malleable iron cap. Lower section is heavy cast iron . . . which straddles and protects the service stop. Has brass collar. Key furnished as part of service box and extension of one foot is regular. Suitable for service stops ½ to 1 inch. Length extended, in feet: 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½ and 8.

EST. 1856 McDonald

A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS • PUMPS • OIL EQUIPMENT

Liquid Level Controls

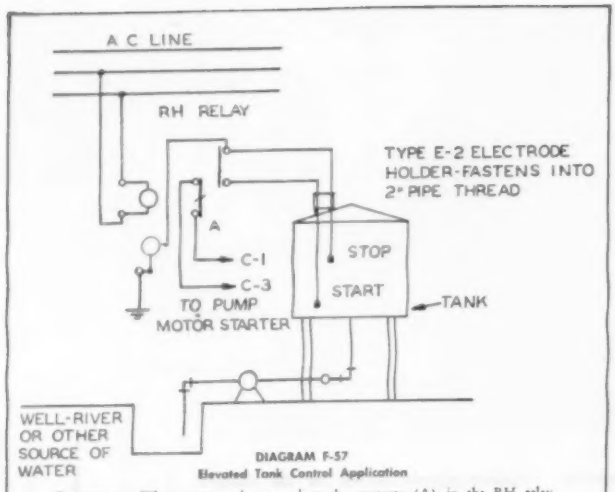


DIAGRAM F-57
Elevated Tank Control Application

OPERATION: When water reaches stop electrode, contacts (A) in the RH relay open to shut down the pump motor. When water reaches lower, or start electrode, contacts (A) close and pump motor starts.

GENERAL: This diagram shows a Type RH relay used to control the operations of a pump delivering water into an elevated tank. The electrodes in the tank, if levels are to be maintained fairly close to the top, may be brass rod. When great variations of levels are desired, it is recommended that electrodes, suspended from the E-2 holder on wire, be used in place of the rod.

Where it is desired to control or maintain the level of a liquid, whether it is in a water storage tank or reservoir, a sewage wet well, or various types of chemical-feed tanks, Floatless Liquid Level Controls, manufactured by the B/W Controller Corp., 2106 E. Maple Rd., Birmingham, Mich., provide the accuracy and dependability that the job demands.

These controls are unaffected by pressure or temperature, and since there are no moving parts in the liquid, many of the difficulties resulting from the use of floats are eliminated. The system consists of the patented B/W induction relay and electrodes suspended from electrode holders. A constant source of alternating current is required and the controls can be used on any liquid that is a conductor of electricity.

The B/W relays are not only available as single units, but they can also be built into control panels involving a number of control applications. These are built to customers' specifications, to fit the job.

Magnetic motor starters are also a part of the B/W line, and they can be furnished with the relays as combination units.

Catalog 2147 describes the controls in detail and shows typical application diagrams.

Dierking Succeeds Winters For Portland Cement

R. F. Dierking has been appointed manager of west central offices of the Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill., succeeding R. W. Winters, who has resigned. Mr. Dierking's headquarters will be in Kansas City, Mo., and he will direct field work in Colorado, Kansas, Missouri, Nebraska, Oklahoma, and Wyoming.

Fred F. Loy, who has been a company field engineer in Iowa for the past 11 years, has been appointed Iowa district engineer to succeed Mr. Dierking.

PIPE FITTINGS

Warren fittings, like Warren pipe, are made in all sizes and to all standard patterns for use with cast iron pipe of standard designs.

Special castings to meet your individual requirements may make use of our large stocks of non-standard patterns.

BELL & SPIGOT—FLANGE —SHORT BODY—PLAIN ENDS — MECHANICAL JOINT — SPECIALS

Sizes—2" to 84"

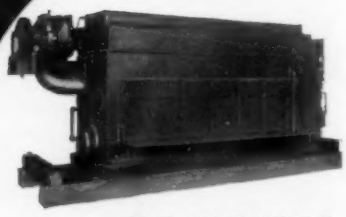
WARREN FOUNDRY & PIPE CORP

11 Broadway New York, N. Y.
72 Federal Street Boston, Mass.

BUCKEYE Engines

DIESEL & DUAL FUEL

MEDIUM SPEED HEAVY DUTY UNITS



SIZES - 120 TO 1500 H.P.

built for
- MUNICIPAL
- PUBLIC UTILITIES
- WATER WORKS
- SEWAGE DISPOSAL PLANTS

WRITE FOR CATALOG 907

ENGINE BUILDERS SINCE 1908

The BUCKEYE MACHINE COMPANY

500 E. O'CONNOR AVE. LIMA, OHIO

RUSTA RESTOR

Prevents Tanks from Rusting

• Employing the basic principles of electro plating, Rusta Restor maintains the tank in a "neutral" condition that prevents rusting. Inexpensive to install – cheap to operate – safe. Approved by national and state authorities. Write for fully descriptive catalog!

RUSTA RESTOR

A DIVISION OF

THE JOHNSTON & JENNINGS COMPANY

861 ADDISON ROAD • • • CLEVELAND 14, OHIO

Concrete Mixers—Portability Plus Performance

The many concrete-maintenance jobs that constantly occur in every city present a problem that the Jaeger Trailer Mixers are equipped to meet.

The trailers are manufactured in

sizes ranging from 3½ to 16 cubic feet of concrete. Ease of operation, quickness of transfer from one location to another, and durability in manufacture all are features that will appeal to the city maintenance crew. Catalog M-8, published by the Jaeger Machine Co., Columbus 16, Ohio, gives the details on the mixers.

The mixers will load or discharge in 7 seconds. Their water system is accurate to ½% of the tank volume. The controls are at a convenient location. Many of the mixers have the popular skip shaker that insures positive loading of each batch.

Pittsburgh
Chain-Link
Fence
★
PROTECTION
FOR ALL
MUNICIPAL
PROPERTIES

Pittsburgh
Steel Company
3266 GRANT BUILDING, PITTSBURGH 30, PA.

FIREFIGHTING TODAY IS Different

Shuredry
IS ON THE JOB!

Putting out the fire without regard to damage is as out-of-date as the old back-breaking hand pressure pump. Today, trained salvage crews equipped with Shuredry Green-Bak Covers stay ahead of the fire . . . protecting merchandise, furniture and fixtures from costly smoke and water damage.

FIREMEN'S ASSN'S. TEACH WITH SHUREDRY

Many progressive associations use Green-Bak Shuredry Covers to teach modern methods of salvage to smaller departments in their state.

Shuredry
GREEN-BAK
SALVAGE
COVERS

Approved
Factory Mutual Laboratories and National Board of Fire Underwriters

They TOP Every TEST

Shuredry Green-Bak Salvage Covers top every known test for water penetration and seepage. Pressure-impregnated with the exclusive Fulton *dry* treatment, Shuredry covers will not stiffen in cold weather or become tacky in heat. They're always fast to spread . . . easy to fold and carry.

On your next order to your fire equipment dealer, specify SHUREDRY *Green-Bak Salvage Covers.*

FULTON BAG & COTTON MILLS
Manufacturers Since 1870
New Orleans, Denver, St. Louis, Atlanta, Dallas, Minneapolis, Kansas City, Kans., New York

New Light-Weight Welder from General Electric

The welder, mounted on a pneumatic - tired trailer, being used in the fabrication of a large-diameter air-pressure pipeline.

A new light-weight, engine-driven d.c. welder designed for general use has been announced by General Electric, Schenectady 5, N. Y. Weighing 660 pounds and delivering a maximum of 250 amperes of welding current, the machine can be transported on a pick-up truck, with room to spare.

Powered by a Wisconsin VF-4 air-cooled engine, speed-ratio coupled by a steel-core V-belt drive to a G-E Type WD-3200 generator with 50% duty cycle, it has a fully calibrated dual control that permits the accurate setting of a desired welding current before the arc is struck. The welder is 44⅛ inches long, 24½ inches wide, and 35⅜ inches high. It may be obtained mounted on a two-wheeled trailer.

Bachmann to Handle Dorr In Florida

Frank Bachmann will handle all sanitary engineering work in Florida for the Dorr Co., 570 Lexington Ave., New York 22, N. Y. His headquarters will be at Orlando, Fla., P. O. Box 1962.

Before joining the Dorr staff in 1920, Mr. Bachmann was associated with the Illinois State Water Survey, the Sanitary District of Chicago, and the California and Connecticut State Boards of Health.

Westinghouse Appoints Aviation Sales Manager

The Westinghouse Electric Corp., Pittsburgh 30, Pa., has appointed William C. Norvell manager of aviation sales for the Cleveland Lighting Division. Mr. Norvell will be responsible for all headquarters sales activities of aviation-lighting equipment for the company.

REVOLUTION IN *Garbage Disposal*

EXCLUSIVE **LOAD LUGGER** PROTECTION

Against WIND, RODENTS, FLIES OR FIRE

● It's the famous Brooks Load Lugger system of detachable truck bodies handled by a single truck! One-piece Brooks bodies are fully enclosed and liquid tight—positive protection against wind, rodents, flies or fire. Easily loaded (through sliding doors) at refuse collection points, thus eliminating re-handling and cutting costs tremendously. Tilt-type design, clean discharge—no messy leakage as found in drop bottom types. Ask our competent engineeers to make a free survey of your city's needs. Write for catalog.

Brooks

BROOKS EQUIPMENT & MFG. CO.
19 DAVENPORT RD., KNOXVILLE 1, TENN. U. S. A.

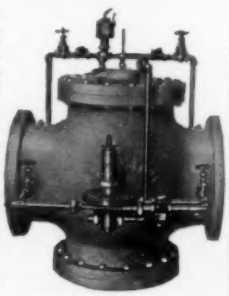
LOAD LUGGER
TRADE MARK REGISTERED

LOAD LUGGER · DAY PULVERIZER · CANE LUGGER

ROSS AUTOMATIC VALVES

Altitude Valves for tank and reservoir, with two sets of controls — Automatic Hydraulic and Electric Remote Control. Hydraulic pilot normally operates the valve, while electric pilot is used for emergency only.

Model 40-DAWR Double Acting Valve may be operated by electric pilot regardless of elevation of water in tank or reservoir, for a break in supply or distribution and when fire pressures require direct pumpage. Model 50 AWR Single Acting Valve may be controlled in same manner.

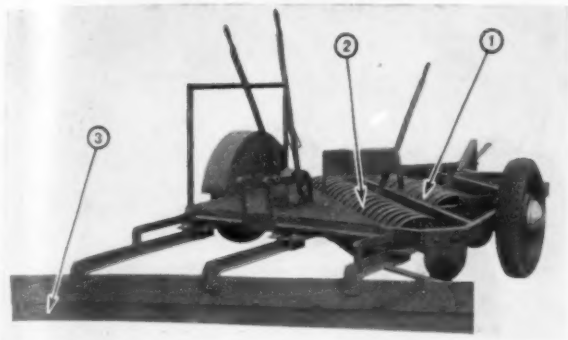


Model 40-AWR Single Acting semi-throttling valve will close on reversal of flow and the electric pilot would serve only a single purpose — either to open wide or close as emergency may require.

Established 1879

ROSS VALVE MFG. CO.
Incorporated
P.O. BOX 596, TROY, N.Y.

Triple Action On Road Maintainer



1. The primary mixer and scarifier blade. 2. The secondary mixing and rough-shaping blade. 3. The finishing blade.

The Maintenance Equipment Co., 90 Dexter Rd., East Providence 14, R. I., has announced a road-surfacing maintainer of new design that has a primary mixer and scarifier blade of independent, evenly spaced teeth which follows all contours, plowing, loosening, and mixing; a secondary mixing and rough-shaping blade of segmented, spring-tensioned sections which shapes roughly, carrying surplus material to windrow, and a solid, widely adjustable finishing blade which picks up windrow and shapes a smooth, even surface.

The flexible-edged blade insures thorough mixing of bitumen and cover material. Although designed for blacktop, the maintainer may be used equally efficiently for gravel-surface maintenance. This Meco Triple-Action Roadmaster may be towed by a tractor, truck, or jeep.

New Everett Trencher Ready for Delivery

The new Everett trencher, which is manufactured by the Everett Mfg. Co., Inc, Phoenix, Ariz., and which will be

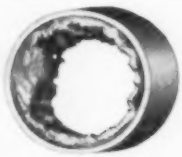
The Everett trencher hooked to a Ferguson tractor. The trencher is in raised position.

nationally distributed through the Tractor Sales Corp., 1409 Santa Fe Ave., Los Angeles, Calif., is particularly well suited for digging housing-project foundations, irrigation lines, and water, gas, electric, and sewer lines.

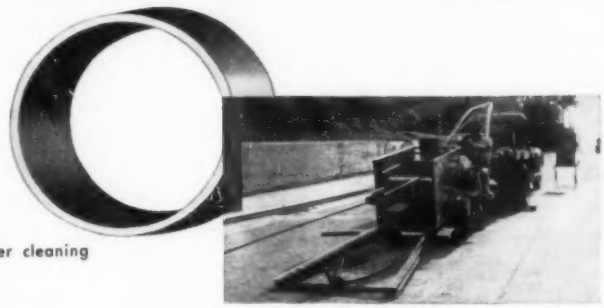
The trencher has cast steel digging buckets, and clearance teeth which are adjustable. It digs from 12 to 18 inches in width, but it is possible to dig an additional-width trench by extending the wheel width of the Ferguson tractor to which the trencher is hooked. Traveling from 1½ to 5 feet a minute, the machine can be set to cut any distance down to a depth as great as 42 inches.

Additional features include special transmission for necessary speed reduction; this can be switched to standard tractor speeds by a handy shifting lever. The trencher can travel over curbs and up inclines, and it maneuvers quickly into working position—it can be moved from job to job under the tractor's own power or be transported by trailer.

Before cleaning



A CLEANING JOB THAT LASTED 30 YEARS



After cleaning

Special Power Winch for pulling cleaning head through pipe.

Just 30 years ago the water mains of the city of Toledo, Ohio were successfully cleaned by National.

The thoroughness with which National performed that initial job, along with the exceptionally fine water treatment system installed by Toledo's Water Works Department has enabled the original cleaning to last 30 years.

It was because of that unusual record that Toledo's progressive water works department *has again selected National* to clean its entire water main system—a program that will take over five years to complete.

Tests made on those lines already cleaned by National indicate higher pressure and increased carrying capacities, resulting in greater fire protection for Toledo's outlying districts.

There's no obligation to have a National engineer estimate the cost of cleaning your lines. Why not write *today!*

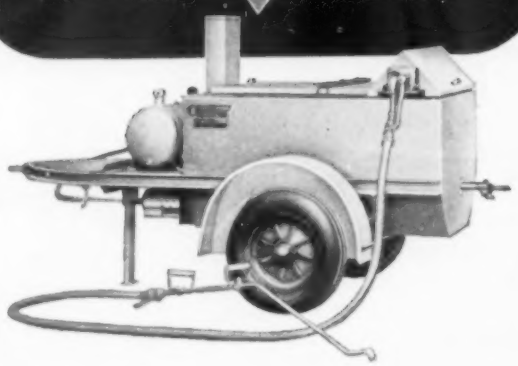
30

NATIONAL WATER MAIN CLEANING CO., 50 Church St., N.Y. 7, N.Y.

ATLANTA, 1221 Mortgage Guarantee Building • BOSTON, 115 Peterboro Street • CHICAGO, Room 1336, 122 So. Michigan Avenue • HOUSTON, 2518 Grant Street • KANSAS CITY, 421 BMA Building LOS ANGELES, 448 South Hill Street • MEMPHIS, 822 Dermon Building • OMAHA, 3812 Castellar Street • RICHMOND, 210 East Franklin Street • SPRINGFIELD, MO., 844 North Main Street • SALT LAKE CITY, 149-151 W. Second So. Street • SAN FRANCISCO, 681 Market Street • MONTREAL, 2028 Union Ave. • VANCOUVER, B. C., 505 West 1st Ave. • WACO, P. O. Box 887 • WINNIPEG, 576 Wall Street • HAVANA • MAYAGUEZ, PUERTO RICO • BOGOTA • CARACAS • MEXICO CITY

LET'S PATCH THOSE ROADS
THE LOW COST WAY . . . USE AN

84-HD KETTLE



With so much road repair to be done it is the wise highway crew that uses the best method, yet the Low Cost method, for patch work. With the Littleford 84-HD Kettle, the maintenance speeds up and the cost goes down, because this kettle is designed for faster heating, has patented features for producing more hot material with less fuel. With a Hand Spray or Motor Spray Attachment, the 84-HD becomes even more efficient. Let's patch those holes now!—with the most modern piece of equipment, the Littleford 84-HD Kettle.

MANUFACTURERS OF

"Spray Master" Pressure Distributors

"Tankar" Steam Heaters	Highway Brooms	Asphalt Supply Tanks
"Kwik-Melter" Roofers Kettles	Tool Heaters	No. 101 Utility Spray Tanks
Trail-O-Rollers	Trail-O-Distributors	84-HD Asphalt Kettles

LB LITTLEFORD

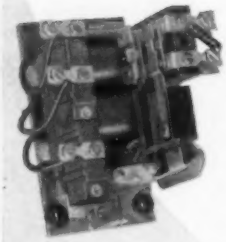
BLACK TOP ROAD MAINTENANCE EQUIPMENT SINCE - 1900

LITTLEFORD BROS., INC.

500 E. Pearl St., Cincinnati 2, Ohio

B/W All Electric Floatless...

LIQUID LEVEL CONTROLS



Control variations in levels from ¼" upward. Remote control if desired — any distance. Controls unaffected by acids, caustics, pressures or temperatures.

Since 1933 B/W Controls have provided positive, dependable, economical liquid level control. No floats! No vacuum tubes! No moving parts in liquid.

WRITE FOR CATALOG

B/W CONTROLLER CORPORATION

2106 E. Maple Road
Birmingham, Mich.

FIRST and FOREMOST IN THE FLOATLESS CONTROL FIELD

Does your CITY have a STREET SIGN PROBLEM?

Provide your municipality with MAK-A-SIGN, the common sense, efficient method of identifying your city streets and avenues—LEGIBLY—EASILY—CONVENIENTLY and INEXPENSIVELY.

MAK-A-SIGN, the sturdy all metal sign making product, warrants your immediate investigation. You will be amazed at the versatile application and pleasing sign results obtained by MAK-A-SIGN method.

Write today for free descriptive folder and price list.

MAK-A-SIGN CO.

Manufacturers of SIGN MAKING EQUIPMENT

P. O. Box 37 Birmingham 9, Ala.

FLINK SPREADER

UNQUESTIONABLY THE FINEST HYDRAULIC SPREADER

Hundreds more transportation companies, cities and counties are using Flink Spreaders to spread granulars in ice control and highway maintenance work. Spreads forward or backing up, full or half width of street. Controlled from cab.

Write for literature.

FLINK CO. Dept. S-1, STREATOR, ILL.

Reproduce Large Engineering Drawings

Diebold, Inc., Canton, Ohio, manufactures this Flofilm 42-inch microfilming camera, which microcopies large engineering drawings in a few seconds.

Segoe Expands Offices

Ladislas Segoe, city planner and consulting engineer, has announced a new location and an expansion of offices of Ladislas Segoe & Associates; they are now at the Provident Bank Bldg., Seventh St. at Vine, Cincinnati 2, Ohio.

Economy Pumps Names Minneapolis Distributor

The R. G. Dinham Co., Wesley Temple Bldg., Minneapolis, Minn., has been appointed distributor for Economy Pumps, Inc., Hamilton, Ohio, manufacturers of centrifugal, axial flow, and mixed-flow pumps.

From Real Estate To Fire Apparatus

American Business for August, 1948, in a rapid review of the careers of a handful of business leaders, reveals that President Edward E. O'Neill of American-LaFrance-Foamite Corp., Elmira, N. Y., opened his career by selling real estate. Before very long, however, he was in the fire-fighting business, first with the Pyrene Mfg. Co., Newark, N. J. Three years later he organized the Firefoam Co. of Ohio, which consolidated first with the Fire Equipment Co. and then with the American - LaFrance - Foamite Corp., where Mr. O'Neill has been president since 1939.

PREMAX

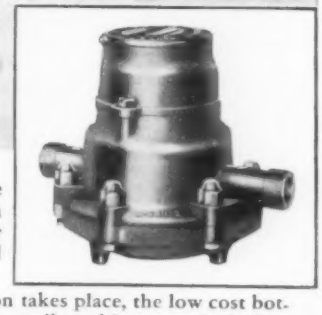
Is Your House Number System Adequate?

A well-planned system of House Numbering is essential in any city as a means of identifying one home from another and to assure proper delivery of mail.

Even though a city may establish the most modern and approved system, the plan will be of little value unless a proper and uniform type of house number is adopted as the standard.

Premax has supplied 3" and 4" stamped and embossed metal House Numbers to hundreds of municipalities—numbers to meet all requirements of visibility and artistic design. Write for complete details.

PREMAX PRODUCTS
DIVISION CHISHOLM-RYDER CO., INC.
4946 HIGHLAND AVE.
NIAGARA FALLS, N. Y.



Freezing weather! Inadequate heating! These factors need not load up your meter shop with repair jobs. The frost bottom in American or Niagara water meters patented in 1921 and improved in 1938 prevents costly damage.

When ice forms in the meter and expansion takes place, the low cost bottom casting breaks, relieves pressure and allows all working parts including the gears to move with the ice. Damage is limited to the frost bottom. By replacing the bottom, on the spot, the meter is again ready for service.

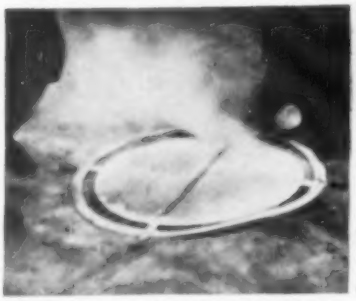
The breaking point is carefully controlled and checked in advance by pressure tests at the factory.

The advantages of frost bottom meters are available to you at no extra cost.

Write for the full story on these meters that have become standard in many communities where temperatures drop below freezing.

AMERICAN BRONZE CASE
NIAGARA GALV. IRON CASE
WATER METERS
BUFFALO METER COMPANY
2902 MAIN STREET • BUFFALO 14, NEW YORK
Simplicity

ICE-DESTROY opens frozen manhole covers



When the cover has been located the frame is put on and ICE-DESTROY sprinkled into the slots.

This shows how the ICE-DESTROY has performed the work. The ice at this location was 7-9 inches thick. This work usually takes 2 men 4-8 hours by hand!

The cake of ice being lifted from the cover. The whole operation only took *5 minutes!*

These three pictures not only show how simply ICE-DESTROY opens badly frozen manholes—they show a manhole cover actually being removed so that the linemen can get down into the manhole. Using this inexpensive proved chemical, they got there in minutes instead of hours. The drudgery as well as expense of pick work was eliminated. For opening manholes in winter and wherever else it is important to eliminate ice—use ICE-DESTROY. Send for literature. Now's the time to prepare.

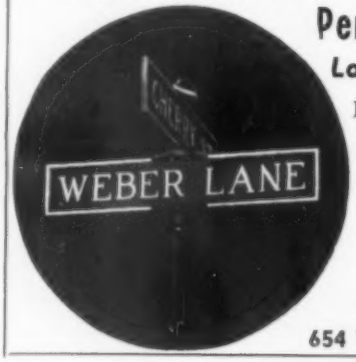
CHEMICAL DEVELOPMENT CORPORATION

31 GARDEN ST.
NEWARK 5, N. J.

NIGHT *and* DAY VISIBILITY *with* SUBURBAN STREET MARKER

Permanent Aluminum Street Sign

Low Cost ***No Maintenance***



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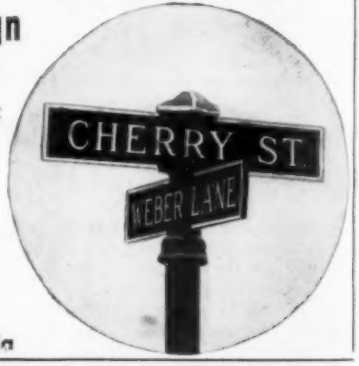

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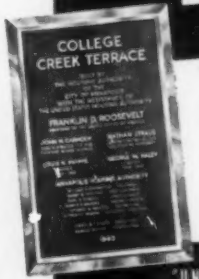

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"If I were the mayor's nephew I'd have a Kaiser Disposal Unit, too."

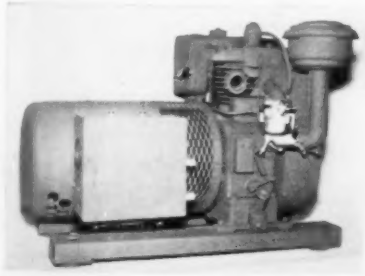
Walker Joins Motorola

Frank W. Walker, former chief engineer for the Greyhound Bus Corp., has been appointed Michigan radio-communications engineer by Motorola, Inc., 4545 Augusta Blvd., Chicago 51, Ill.

Frank W. Walker

An experienced two-way FM mobile-radio engineer, Mr. Walker came to Motorola after designing and installing the nation's first cross-country-bus two-way radio network for Greyhound. Before that he was chief engineer for the Michigan State Police, where he installed one of the largest state-police two-way radio systems in the country. Both these installations are Motorola equipment.

Lighting Plant Has 2.6 HP



Although the new 1,000-watt Katolight lighting plant has only a 2⅝-by-2⅝-inch bore and stroke, it develops 2.6 hp at 1,800 rpm, and has a governor sensitive enough to hold frequency within less than 1 cycle variation between partial load and full load. It is furnished with a built-in automatic choke mechanically operated.

One of the most desirable features of the new engine is the accessibility of the ignition contact points: the breaker points are mounted outside of the crank case alongside of the carburetor so that it is not necessary to remove the fly wheel to service the breaker points. The unit is available with gravity carburetor with one-gallon fuel tank or it can be furnished with mechanically operated fuel pump. The plant may be obtained with remote control or for automatic control. It will produce a constant source of alternating current either for standby purposes or as the sole source of supply. Standard automobile batteries are used when self-cranking is desired.

The set is manufactured by the Kato Engineering Co., Mankato, Minn.

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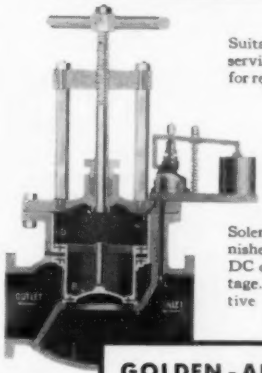

Suitable for any spray service requirements or for remote electrical control. Combination design permits valve to be set in any throttling position and held open like an ordinary stop valve. Solenoid may be furnished for either AC or DC circuit for any voltage. Write for descriptive technical catalog.

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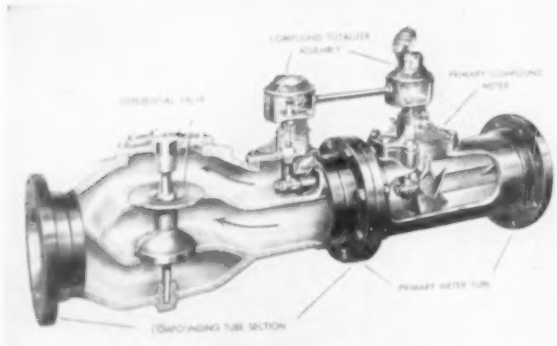

The Compound meter for flow can accommodate ranges as wide as 1 to 125.

Where wide flow ranges occur, the Sparling Compound main-line meter is frequently used to meet these requirements. The meter is particularly useful in conjunction with various chlorinator operations and other chemical-feed applications.

The meter consists essentially of two Sparling main-line meters, one larger than the other. The small meter is mounted in a tube that by-passes a full-capacity double-disc valve in the main flow. The valve is designed to open gradually when the flow is sufficient for the larger meter to attain accurate registration.

There is no sharp cut-over point as in most service-type compound meters, and the pressure drop is much less. The over-all pressure-drop at full rated capacity is less than two psi in the 8-3 inch compound size and larger.

Bulletin 310, published by R. W. Sparling, Box 3277, Terminal Annex, Los Angeles 54, Calif., describes this and other water-measuring equipment.

Conners Honored by National Water Main Cleaning Company

The National Water Main Cleaning Co., 50 Church St., New York 7, N. Y., recently gave a luncheon in honor of Joseph B. Conners, in commemoration of more than 37 years of continuous active service with the company.

J. B. Conners

Mr. Conners' background in the water-works field dates back to 1909 when he started with the Trenton Water Department; two years later he became associated with National. Since 1920 he has made his headquarters in Boston.

During the luncheon, Mr. Conners was presented with a service emblem by the president of the company, J. A. deCamp.

Present at the luncheon were:

Roger W. Esty, Superintendent, Water and Sewer Works, Danvers, Mass.

Leland Gardner Carlton, Superintendent, Municipal Water Works, Springfield, Mass.

Reginald F. Hayes, general sales manager, Hydraulic Development Corp., Boston, Mass.

H. Seaver Jones, president, Centriline Corp., New York, N. Y.

E. Shaw Cole, 'Pitometer Co., New York, N. Y.

J. A. Frank, vice-president, National Water Main Cleaning Co., New York.

Mr. Patrick Kelley, The Leadite Co., Philadelphia, Pa.

Mr. Dennis Sullivan, Superintendent of Streets and Water, Malden, Mass.

Mr. Henry Hughes, Superintendent of Water, Medford, Mass.

Mr. A. L. Lash, Caldwell Co., Mattapan, Mass.

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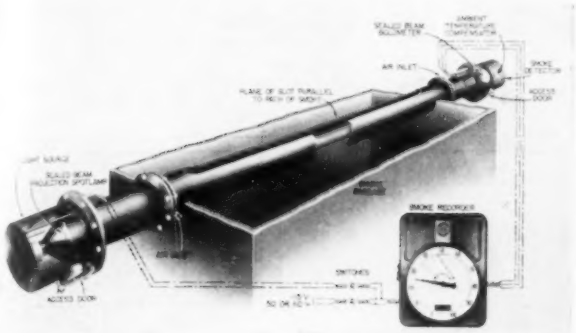
Bailey Develops Smoke-Density Recorder



A cross-section of Bailey's smoke-density recorder.

The Bailey Meter Co., Cleveland, Ohio, has developed a new electronically operated smoke-density recorder which measures and records the density of smoke or dust in flues or ducts. These records will give the first warning of faulty combustion conditions.

The instrument consists of a standard Bailey electronic recorder, a Bolometer-type smoke detector, and a sealed-beam light source.

Two detectors may be connected to a two-pen recorder to record the smoke density in two different flues. Or a record of smoke density may share the same chart with one of temperature, percentage of oxygen, or some other related factor. Each measuring circuit may be equipped with switches to actuate signals or alarms when the smoke density reaches a predetermined maximum value. They may also be equipped with control to automatically turn on over-fire air jets.

U. S. Pipe and Foundry To Build New Plant

The United States Pipe and Foundry Co., Burlington, N. J., has purchased a 35-acre tract of land at Richmond, Calif., for the site of a new plant for the production of cast iron pressure pipe made by the centrifugal process.

This product is widely used in water works, sewage works, and gas systems. It is anticipated that the new plant will be able to take care of orders emanating from Pacific Coast states.

THE MODERN LAWN MOWER SHARPENER

CUTS MAINTENANCE COSTS

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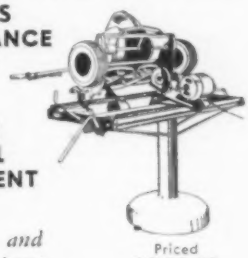

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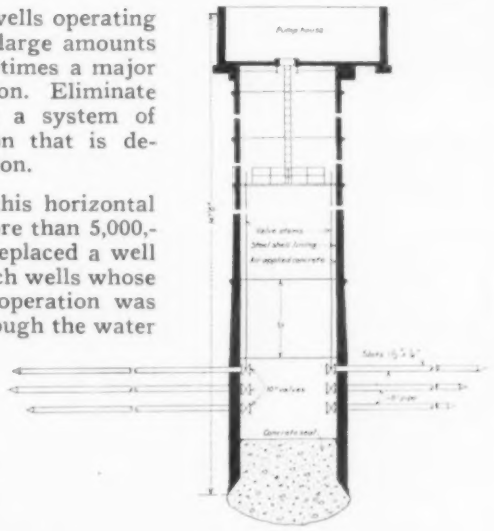
The replacement cost of wells operating in hard waters, carrying large amounts of dissolved CO_2, is sometimes a major factor in well field operation. Eliminate such problems by using a system of ground water exploitation that is designed to avoid encrustation.

For the last nine years this horizontal collector has produced more than 5,000,000 gallons per day. It replaced a well field of conventional 24-inch wells whose average life at capacity operation was less than two years. Although the water has a pH of about 7.3 and a total hardness (equally divided between temporary and permanent) of about 360 ppm, the screens of this horizontal collector have not encrustated.



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PHOTOS COURTESY OF NEW YORK FIRE DEPARTMENT (See Page 3)

How this world-renowned rescue squad aids fighters on tough fires is told on page 81. For radio's increasing role in municipal operations as played in Toledo's fire and police departments, see page 94. Experience with high-pressure fog in small fire departments is related on page 100.